```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      Cam sequence : 1-5- 3- 6- 2- 4
Note inst. in remarks column
Test sheet
                                                      SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                    : VOL 7.0 I 1 : 14.11.86
Edition
Superceeded
Calibrating oil : ISO-4113
                                                      SD mark cyl. no. : 1
                   : 0 401 846 500
                                                      BASIC SETTING
Combination no.
                                                                      1/mi: 700
Injection pump
                                                      1st speed
Pump designation : PE6P110A320RS413W
EP type number : 0 411 816 158
                                                      Contr.-rod trav.mm: 12.20...12.30
Governor
Governor design. : RQV250...1200PA499
Governor no. : 0 421 813 242
                                                      Del.quantity cm3/: 12.5...12.7
                                                                     100H.: (12.2...13.0)
Customer-spec. information
                                                                    cm3/:0.4
Customer
                   : VOLVO
                                                      Dispersion
Engine
                    : TD 70F
                                                                     100H.: (0.7)
                                                      2nd speed 1/min: 250.0
Contr.-rod trav. m: 5.2...5.4
1st version kW : 174.0
              1/min: 2400
Speed
                                                      Del.quantity cm3/: 1.6...2.0
Dispersion cm3/: 0.3
TEST BENCH REQUIREMENTS
                                                                     100H.: (0.6)
Calibrating-oil inlet temp. °C
                    : 38...42
                                                      SLEEVE POSITION
                                                      Control-lever position
                                                                   Degree: -1
1/min: 1200
Overflow valve
                    : 1 417 413 025
                                                      Cont.-rod travelmm: 15.20...17.80
Inlet press., bar: 1.50
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Calibrating nozzle-holder
                 : 0 681 343 009
                                                      1st version
 assembly
                                                      Speed
                                                                     1/min: 700
                                                      Charge press. hPa: 750
Opening
                                                      Del.quantity cm3/: 125.0...127.0
1000H.: (122.0...130.0)
pressure, bar : 172...175
                                                                   cm3/ : 4.00
                                                      Dispersion
                                                                   1000H.: (7.50)
Test inj. tubing : 1 680 750 015
                                                      HIGHEST RATED SPEED
Outside diameter
x Wall thickness
                                                      1st version
                   : 6.00x1.50x600
                                                      Control-lever
x Length mm
                                                       position degrees: 58...66
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                      Testing:
                                                      1st c-rod trav.mm : 11.20
Speed 1/min : 1240...1250
    per values ____
                                                      2nd c-rod trav.mm : 4.00
START OF DELIVERY
                                                                   1/min: 1355...1385
                                                        Speed
                                                                   1/min: 1500
Test pressure, bar: 25...27
                                                      4th speed
                                                        C-rod tray.mm : 0.00...1.00
Prestroke mm
                    : 3.00...3.10
                    : (2.95...3.15)
                                                      LOWEST RATED SPEED I
Contr.-rod trav.mm: 9.00...12.00
                                                      Control-lever
A01
```

position degrees: 5...13 Testing: Speed 1/min : 100 C-rod trav.mm min : 6.70 Speed 1/min : 250 C-rod tray.mm : 5.20...5.40 CONSTANT REGULATION 1/min : 400...510 Speed compensator (LDA, ADA, ALDA) 1st version Setting 1/min : 500 hPa : 750 Speed Pressure Contr.-rod trav.mm: 12.20...12.30 Measurement Speed 1/min : 500 1st pressure hPa C-rod trav.mm : 9.50...9.60 2nd pressure hPa : 410 C-rod trav.mm : 11.50...11.60 3rd pressure hPa : 200 C-rod trav.mm : 10.20...10.40 FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : -Speed 1/min: 700 Del.quantity cm3/: 75.0...78.0 1000H.: (72.5...80.5) Remarks:

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....
                                                                            : 1-5-3-6-2-4
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                       Cam sequence
Note inst. in remarks column
                                                       SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Test sheet
                    : VOL 7,1 A
Edition
                    : 12.09.86
Superceeded
                    : 10.85
                    : ISO-4113
Calibrating oil
                                                       SD mark cyl. no. : 1
Combination no.
                    : 0 401 846 505
                                                       BASIC SETTING
                                                                       1/mi: 700
Injection pump
                                                       1st speed
Pump designation : PE6P110A320RS483
                    : 0 411 816 159
                                                       Contr.-rod trav.mm: 12.30...12.40
EP type number
Governor
Governor design. : RQV250...1200PA499-1
Governer no. : 0 421 813 460
                                                       Del.quantity cm3/: 12.7...12.9
                                                                      100H.: (12.4...13.2)
Customer-spec. information
                                                                      cm3/:0.4
Customer
                    : VOLVO
                                                       Dispersion
                                                                      100H.: (0.7)
Engine
                    : TD71F
1st version kW : 162.0
                                                                      1/min: 250.0
                                                       2nd speed
                                                       Contr.-rod trav. m: 5.3...5.5

Del.quantity cm3/: 1.6...2.0

100H.: (-)

Dispersion cm3/: 0.3

100H.: (0.6)
Speed
              1/min: 2400
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. C
                    : 38...42
                                                       SLEEVE POSITION
Overflow valve
                                                       Control-lever position
                    : 1 417 413 025
                                                                     Degree: -1
                                                       Speed 1/min: 1200
Cont.-rod travelmm: 15.20...17.80
Inlet press., bar: 1.50
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
Calibrating nozzle-holder
                    : 0 681 343 009
 assemb(y
                                                       1st version
                                                                      1/min: 700
Opening
                                                       Speed
                                                       Charge press. hPa: 900
Del.quantity cm3/: 127.0...129.0
1000H.: (124.0...132.0)
Dispersion cm3/: 4.00
pressure, bar
                    : 172...175
Test inj. tubing : 1 680 750 015
                                                                     1000H.: (7.50)
Outside diameter
x Wall thickness
                                                       HIGHEST RATED SPEED
                    : 6.00X1.50X600
x Length mm
                                                       1st version
                                                       Control-lever
                                                        position degrees: 58...66
(A) Injection pump setting values
    Insp. values in parentheses
    Set constant delivery quant.
                                                       Testing:
                                                       1st c-rod trav.mm : 11.30
    per values ____
                                                                    1/min: 1240...1250
                                                         Speed
START OF DELIVERY
                                                       2nd c-rod trav.mm: 4.00
                                                                    1/min: 1380...1410
Test pressure, bar: 25...27
                                                         Speed
                                                                     1/min : 1500
                                                       4th speed
                                                         C-rod trav.mm : 0.00...1.00
                    : 3.00...3.10
Prestroke mm
                    : (2.95...3.15)
Contr.-rod trav.mm: 9.00...12.00
                                                       LOWEST RATED SPEED I
A03
```

Control-lever position degrees: 5...13 Testing: 1/min : 100 Speed C-rod trav.mm min: 6.80 Speed 1/min: 250 C-rod trav.mm : 5.30...5.50 CONSTANT REGULATION 1/min: 300...410 Speed compensator (LDA, ADA, ALDA) 1st version Setting 1/min : 500 hPa : 900 Speed Pressure Contr.-rod trav.mm: 12.30...12.40 Measurement 1/min: 500 Speed G-rod trav.mm : 10.20...10.30 2nd pressure hPa : 560 C-rod trav.mm : 12.10...12.20 3rd pressure hPa : 300 C-rod trav.mm : 10.40...10.60 FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : -1/min: 700 Speed Del.quantity cm3/: 85.0...88.0 1000H.: (82.0...91.0)

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Cam sequence : 1-5-3-6-2-4
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
                                                         SD ang. spacing GS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)
Test sheet
                     : VOL 7,1 A 1
                     : 12.09.86
Edition
Superceeded
                     : 10.85
                   : ISO-4113
                                                         SD mark cyl. no. : 1
Calibrating oil
Combination no.
                     : 0 401 846 506
                                                         BASIC SETTING
                                                                          1/mi: 700
Injection pump
                                                         1st speed
Pump designation
                     : PE6P110A320RS483-1
                                                         Contr.-rod trav.mm: 13.10...13.20
EP type number
                     : 0 411 816 160
Governor
Governor design. : RQV250...1200PA499-2
Governor no. : 0 421 813 461
                                                         Del.guantity cm3/: 14.2...14.4
                                                                         100H.: (13.9...14.7)
Customer-spec. information
                                                                        cm3/:0.4
Customer
                     : VOLVO
                                                         Dispersion
                                                                         100H.: (0.7)
                     : TD71FS
Engine
                                                         2nd speed 1/min: 250.0

Contr.-rod trav. m: 5.3...5.5

Del.quantity cm3/: 1.6...2.0

100H.: (-)

Dispersion cm3/: 0.3

100H.: (0.6)
1st version kW : 180.0
Speed
               1/min: 2400
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. C
                     : 38...42
                                                          (B) Setting of injection pump with
                                                              externally-mounted governor
Overflow valve
                     : 1 417 413 025
                                                         SLEEVE TRAVELS
                                                         1st speed 1/min: 250
Sleeve travel mm: 1.20...1.30
Inlet press., bar: 1.50
                                                                       1/min: 300
Calibrating nozzle-holder
                                                         2nd speed
                     : 0 681 343 009
                                                            Sleeve travel mm: 1.70...2.00
 assembly
                                                                        1/min: 400
                                                         3rd speed
                                                           Sleeve travel mm: 2.50...2.80 th speed 1/min: 700 Sleeve travel mm: 4.40...4.70
Opening
 pressure, bar
                     : 172...175
                                                         4th speed
                                                                        1/min: 1200
                                                         5th speed
                                                            Sleeve travel mm: 7.60...7.80
                    : 1 680 750 015
Test inj. theing
                                                         SLEEVE POSITION
Outside diameter
x Wall thickness
                                                         Control-lever position
                   : 6.00x1.50x600
                                                                       Degree: -1
x Length mm
                                                         Speed 17min: 1200
Cont.-rod travelmm: 15.20...17.80
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                         FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values ____
                                                         1st version
                                                                        1/min: 700
START OF DELIVERY
                                                         Speed
                                                         Charge press. hPa: 900
Test pressure, bar: 25...27
                                                         Del.quantity cm3/: 142.0...144.0
1000H.: (139.0...147.0)
                     : 3.00...3.10
Prestroke mm
                     : (2.95...3.15)
                                                         Dispersion cm3/ : 4.00
                                                                       1000H.: (7.50)
Contr.-rod trav.mm: 9.00...12.00
A05
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HIGHEST RATED SPEED 1st version Control-lever position degrees: 58...66 Setting point: 1/min: 1200 Speed Contr.-rod trav.mm: 16.5 Testing: 1st c-rod trav.mm : 12.10 1/min : 1240...1250 Speed 2nd c-rod trav.mm : 4.00 Speed 1/min: 1385...1415 4th speed 1/min: 1500 C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 5...13 Testing: Speed 1/min: 100 C-rod trav.mm min: 6.80 Speed 1/min: 250 C-rod trav.mm : 5.30...5.50 CONSTANT REGULATION 1/min: 300...410 Speed compensator (LDA, ADA, ALDA) 1st version Setting 1/min : 500 Speed hPa : 900 Pressure Contr.-rod trav.mm: 13.10...13.20 Measurement Speed 1/min : 500 C-rod trav.mm : 10.20...10.30 2nd pressure hPa : 700 C-rod trav.mm : 12.90...13.00 3rd pressure hPa : 300 C-rod trav.mm : 10.60...10.80 FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : -1/min : 700 Speed Del.quantity cm3/: 85.0..88.0 1000H:: (82.0...91.0)

```
: 1-5-3-6-2-4
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                         Cam sequence
Note inst. in remarks column
Test sheet
                                                         SD ang. spacing ^{0}CS: 0-60-120-180-240-300 Tolerance + - ^{0}: 0.50 (0.75)
                     : DAF 11,6 Y3
                    : 09.03.87
Edition
Superceeded
                   : 10.85
: ISO-4113
Calibrating oil
                                                         BASIC SETTING
Combination no.
                     : 0 401 846 510
                                                                          1/mi: 875
                                                          1st speed
Injection pump
                                                         Contr.-rod trav.mm: 11.00...11.10
Pump designation : PE6P120A320RS415-1
EP type number
                                                         Del.quantity cm3/: 17.1...17.3
                     : 0 411 826 123
Governor
Governor design.
Governer no.
                     : RQ250/900PA754
                                                                         100H.: (16.8...17.6)
                     : 0 421 801 288
                                                                         cm3/:0.5
                                                         Dispersion
Customer-spec. information
Customer
                                                                         100H.: (0.9)
                    : DAF
                                                                         1/min: 250.0
Engine
                     : DKX 1160E
                                                         2nd speed
                                                         Contr.-rod trav. m: 6.7...6.9
                                                         Del.quantity cm3/: 1.4...2.0
100H.: (1.1...2.3)
Dispersion cm3/: 0.8
100H.: (1.2)
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. OC
                     : 38...42
Overflow valve
                                                         SLEEVE POSITION
                     : 1 417 413 025
                                                         Control-lever position
                                                                       Degree: -1
1/min: 850
                                                         Speed
Inlet press., bar: 1.50
                                                         Cont.-rod travelmm: 14.10...14.90
Calibrating nozzle-holder
                  : 1 688 901 019
                                                         FULL-LOAD DELIV. AT FULL-LOAD STOP
 assembly
                                                         1st version
Opening
                                                         Speed 1/min: 875
Charge press. hPa: 700
Del.quantity cm3/: 171.0...173.0
1000H.: (168.0...176.0)
Dispersion cm3/: 5.00
1000H.: (9.00)
                    : 207...210
 pressure, bar
Perforated-plate
 diameter mm
                     : 0,8
Test inj. tubing : 1 680 750 067
                                                         HIGHEST RATED SPEED
Outside diameter
x Wall thickness
                                                         Setting point:
                                                                       1/min : 850
                    : 6.00x1.50x1000
x Length mm
                                                         Speed
                                                         Contr.-rod trav.mm: 14.5
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                         Testing:
                                                         1st c-rod trav.mm : 10.00
Speed 1/min : 925...940
2nd c-rod trav.mm : 4.00
    per values ____
                                                                       1/min: 995...1025
START OF DELIVERY
                                                            Speed
                                                                       1/min: 1150
                                                         4th speed
Test pressure, bar: 25...27
                                                           C-rod trav.mm : 0.00...1.00
Prestroke mm
                     : 2.80...2.90
                     : (2.75...2.95)
                                                         LOWEST RATED SPEED I
Contr.-rod trav.mm: 9.00...12.00
                                                         Setting point w/out aux. spring
A07
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Speed
            1/min : 250
Contr.-rod trav.mm: 6.5
Testing:
Speed 1/min: 100
C-rod trav.mm min: 7.40
            1/min : 250
Speed
C-rod trav.mm
                : 6.40...6.60
                  : 2.00
C-rod trav.mm
Speed
            1/min : 445...485
TORQUE CONTROL
Dimension a mm : 0.50
Torque-control curve - 1st version
           1/min : 875
1st speed
  C-rod trav.mm : 11.00...11.10
2nd speed
            1/min : 600
                  : 12.00...12.20
  C-rod trav.mm
            1/min : 700
3rd speed
  C-rod trav.mm : 11.60...11.80
4th speed 1/min: 760
  C-rod trav.mm : 11.20...11.50
 compensator (LDA,ADA,ALDA)
1st version
Setting
            1/min : 600
Speed
Pressure
            hPa : 700
Contr.-rod trav.mm: 11.60...11.70
Measurement
            1/min : 600
Speed
1st pressure hPa
                  : 10.40...10.60
  C-rod trav.mm
2nd pressure hPa : 300
                  : 11.10...11.20
  C-rod trav.mm
                 : 250
3rd pressure hPa
  C-rod trav.mm
                  : 10.40...10.70
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 700
            1/min : 600
Speed
Del.quantity cm3/: 173.0...177.0
            1000H.: (170.0...180.0)
Charge press. hPa : -
Speed
            1/min : 600
Del.quantity cm3/: 140.0...142.0
            1000H.: (137.0...145.0)
Remarks:
```

80A

```
: 1-5-3-6-2-4
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                     Cam sequence
Note inst. in remarks column
                                                     SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Test sheet
                    : VOL 7,1 B 1
Edition
                    : 28.11.86
Superceeded
                    : 7.86
Calibrating oil : ISO-4113
                                                     SD mark cyl. no. : 1
                    : 0 401 846 515
                                                     BASIC SETTING
Combination no.
Injection pump
                                                                     1/mi: 700
                                                     1st speed
Pump designation : PE6P110A320RS494
EP type number
                    : 0 411 816 162
                                                     Contr.-rod trav.mm: 11.90...12.00
Governor
                    : RQV300...1100PA435-1
Governor design.
                                                     Del.quantity cm3/: 12.2...12.4
Governer no.
                    : 0 421 813 496
                                                                    100H.: (11.9...12.7)
Customer-spec. information
Customer
                    : VOLVO
                                                     Dispersion
                                                                    cm3/:0.4
                    : TD 71G
                                                                    100H.: (0.8)
Engine
1st version kW : 147.0
                                                                    1/min: 300.0
                                                     2nd speed
                                                     Contr.-rod trav. m: 4.3...4.5
Speed
              1/min: 2200
                                                     Del.quantity cm3/: 1.2...1.6
100H.: (-)
Dispersion cm3/: 0.3
100H.: (0.6)
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                    : 38...42
                                                      (B) Setting of injection pump with
Overflow valve
                                                          externally-mounted governor
                    : 1 417 413 025
                                                     SLEEVE TRAVELS
                                                     1st speed 1/min: 300
Sleeve travel mm: 1.40...1.50
Inlet press., bar: 1.50
Calibrating nozzle-holder
                                                     2nd speed
                                                                  1/min: 420
                                                        Sleeve travel mm: 2.50...2.90
                  : 0 681 343 009
 assembly
                                                                  1/min: 800
                                                      3rd speed
                                                        Sleeve travel mm: 4.80...5.10
Opening
 pressure, bar : 172...175
                                                        th speed 1/min: 1150
Sleeve travel mm: 8.10...8.30
                                                      4th speed
                                                     5th speed 1/min: 1220
Sleeve travel mm: 8.90...9.20
Test inj. tubing : 1 680 750 015
                                                     SLEEVE POSITION
Outside diameter
x Wall thickness
                                                     Control-lever position
x Length mm
                  : 6.00x1.50x600
                                                                  Degree: -1
                                                                   17min: 1170
                                                     Speed
                                                     Cont.-rod travelmm: 15.20...17.80
(A) Injection pump setting values
    Insp. values in parentheses
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
    Set constant delivery quant.
    per values
                                                     1st version
START OF DELIVERY
                                                                    1/min: 700
                                                     Speed
                                                     Charge press. hPa : 1000
Test pressure, bar: 25...27
                                                     Del.quantity cm3/: 122.0...124.0
1000H.: (119.0...127.0)
Dispersion cm3/: 4.00
                   : 3.00...3.10
Prestroke mm
                    : (2.95...3.15)
                                                                  1000H.: (8,00)
Contr.-rod trav.mm: 9.00...12.00
A09
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HIGHEST RATED SPEED 1st version Control-lever position degrees: 60...68 Testing: 1st c-rod trav.mm : 10.90 Speed 1/min : 1140...1150 2nd c-rod trav.mm : 4.00 Speed 1/min: 1220...1250 4th speed 1/min: 1350 C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 7...15 Testing: Speed 1/min : 100 C-rod trav.mm min : 5.80 Speed 1/min : 300 C-rod trav.mm : 4.30...4.50 CONSTANT REGULATION Speed 1/min : 300...470 compensator (LDA, ADA, ALDA) 1st version Setting 1/min : 500 Speed hPa : 1000 Pressure Contr.-rod trav.mm: 11.90...12.00 Measurement 1/min : 500 Speed 1st pressure hPa : -: 9.90...10.00 C-rod trav.mm 2nd pressure hPa : 510 C-rod trav.mm : 11.70...11.80 3rd pressure hPa : 290 C-rod trav.mm : 10.20...10.40 FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : -1/min : 700 Speed Del.quantity cm3/: 87.0...89.0 1000H.: (84.0...92.0)

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BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
                                                       SD ang. spacing ^{\circ}CS: 0-60-120-180-240-300 Tolerance + - ^{\circ}: 0.50 (0.75)
Test sheet
                    : VOL 7,1 B 2
Edition
                    : 02.12.86
Superceeded
                   : 7.86
                                                       SD mark cyl. no. : 1
Calibrating oil : ISO-4113
                                                       BASIC SETTING
Combination no.
                   : 0 401 846 516
                                                                       1/mi: 700
                                                       1st speed
Injection pump
Pump designation : PE6P110A320RS494
EP type number : 0 411 816 162
                                                       Contr.-rod trav.mm: 10.70...10.80
                                                       Del.quantity cm3/: 10.2...10.4
Governor
Governor design. : RQV300...1100PA435-2
Governer no. : 0 421 813 497
                                                                      100H.: (9.9...10.2)
                                                                      cm3/:0.4
Customer-spec. information
                                                       Dispersion
Customer
                    : VOLVO
                                                                      100H.: (0.8)
Engine
                    : TD 71G
                                                                      1/min: 300.0
                                                       2nd speed
                                                       Contr.-rod trav. m: 4.6...4.8
1st version kW
                    : 136.0
                                                       Del.quantity cm3/: 1.2...1.6
100H.: (-)
TEST BENCH REQUIREMENTS
                                                                     cm3/: 0.3
100H.: (0.6)
                                                       Dispersion
Calibrating-oil inlet temp. OC
                    : 38...42
                                                       (B) Setting of injection pump with
Overflow valve
                                                           externally-mounted governor
                    : 1 417 413 025
                                                       SLEEVE TRAVELS
                                                       1st speed 1/min: 300
Inlet press., bar: 1.50
                                                       Sleeve travel mm: 1.40...1.50
2nd speed 1/min: 400
Sleeve travel mm: 2.30...2.60
Calibrating nozzle-holder
 assembly
           : 0 681 343 009
                                                                    1/min: 800
                                                       3rd speed
                                                         Sleeve travel mm: 4.80...5.00
Opening
                                                       4th speed 1/min: 1150
 pressure, bar : 172...175
                                                         Sleeve travel mm: 8.10...8.30
                                                       5th speed 1/min: 1220
Sleeve travel mm: 8.90...9.20
Test inj. tubing : 1 680 750 015
Outside diameter
                                                       SLEEVE POSITION
x Wall thickness
                                                       Control-lever position
                    : 6.00x1.50x600
x Length mm
                                                                    Degree: -1
                                                                     17min: 1180
                                                       Cont.-rod travelmm: 15.20...17.80
(A) Injection pump setting values
    Insp. values in parentheses
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
    Set constant delivery quant.
    per values ____
                                                       1st version
START OF DELIVERY
                                                       Speed
                                                                     1/min: 700
                                                       Charge press. hPa : 1000
Test pressure, bar: 25...27
                                                      Del.quantity cm3/: 102.0...104.0
1000H.: (99.0...102.0)
Dispersion cm3/: 4.00
1000H.: (8.00)
Prestroke mm
                    : 3.00...3.10
(2.95...3.15)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1-5-3-6-2-4
```

A11

HIGHEST RATED SPEED 1st version Control-lever position degrees: 54...62 Testing: 1st c-rod trav.mm: 9.70 Speed 1/min: 1140...1150 2nd c-rod trav.mm : 4.00 1/min : 1215...1245 1/min : 1350 Speed 4th speed C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 6...14 Testing: 1/min : 100 Speed C-rod trav.mm min : 6.10 1/min : 300 Speed : 4.60...4.80 C-rod trav.mm CONSTANT REGULATION 1/min: 300...500 Speed compensator (LDA, ADA, ALDA) 1st version Setting Speed 1/min : 500 hPa : 1000 Pressure Contr.-rod trav.mm: 10.70...10.80 Measurement 1/min : 500 Speed 1st pressure hPa C-rod trav.mm : 9.90...10.00 2nd pressure hPa : 340 C-rod trav.mm : 10.50...10.60 3rd pressure hPa : 290 C-rod trav.mm : 10.20...10.40 FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa: 1000 Speed 1/min: 1000 Del.quantity cm3/: 104.5...107.5 1000H.: (101.0...111.0) Charge press. hPa : -1/min : 700 Speed Del.quantity cm3/: 87.0...89.0 1000H.: (84.0...92.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet Edition : VOL 7,1 A 2 : 12.09.86

Superceeded

Calibrating oil : ISO-4113

Combination no. : 0 401 846 523

Injection pump

Pump designation : PE6P110A320RS483-2

EP type number : 0 411 816 167

Governor

Governor design. : RQV250...1200PA499-3

Governer no. : 0 421 813 515

Customer-spec. information Customer : VOLVO

: TD71G Engine

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. OC

: 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Calibrating nozzle-holder

: 0 681 343 009 assembly

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter

x Wall thickness

: 6.00x1.50x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant.

per values

START OF DELIVERY

Test pressure, bar: 25...27

: 3.00...3.10 Prestroke mm

: (2.95...3.15)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2-

SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - 0.50 (0.75) SD mark cyl. no. : 1 BASIC SETTING 1st speed 1/mi: 700 Contr.-rod trav.mm: 11.20...11.30 Del.quantity cm3/: 11.0...11.2 100H.: (10.7...11.5) Dispersion cm3/:0.4100H.: (0.7) 1/min: 250.0 2nd speed Contr.-rod trav. m: 5.1...5.3

Del.quantity cm3/: 1.6...2.0

100H.: (-)

Dispersion cm3/: 0.3

100H.: (0.6) SLEEVE POSITION Control-lever position Degree: -1 17min: 1200 Speed Cont.-rod travelmm: 15.20...17.80 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version 1/min: 700 Speed Charge press. hPa : 900 Del.quantity cm3/: 110.0...112.0 1000H.: (107.0...115.0) Dispersion cm3/: 4.00 1000H.: (7.50) HIGHEST RATED SPEED 1st version Control-lever position degrees: 62...70 Testing: 1st c-rod trav.mm : 10.20 Speed 1/min: 1260...1270 2nd c-rod trav.mm : 4.00 1/min: 1370...1400 Speed 4th speed 1/min : 1500 C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED 1 Control-lever position degrees: 5...13

-Testing: 1/min : 100 Speed C-rod trav.mm min: 6.60 Speed 1/min : 250 : 5.10...5.30 C-rod trav.mm CONSTANT REGULATION 1/min: 300...410 Speed compensator (LDA, ADA, ALDA) 1st version Setting 1/min: 500 Speed hPa : 900 Pressure Contr.-rod trav.mm: 11.20...11.30 Measurement 1/min: 500 Speed 1st pressure hPa C-rod trav.mm : 9.80...9.90 2nd pressure hPa : 470 C-rod trav.mm : 11.00...11.10 3rd pressure hPa : 300 C-rod trav.mm : 10.10...10.30 FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : -1/min : 700 Speed Del.quantity cm3/: 84.0...86.0 1000H.: (81.0...89.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS : 3.50...3.60 Prestroke mm : (3,45...3.65) Note inst. in remarks column Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1-5-3-6-2-Test sheet Edition Superceeded : RVI 9,8 B 3 : 10.12.86 SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Calibrating oil : ISO-4113 Combination no. : 0 401 846 525 SD mark cyl. no. : 1 Injection pump Pump designation : PE6P12OA32OR\$438-1 BASIC SETTING EP type number : 0 411 826 133 Governor 1st speed 1/mi: 1200 Governor design. : RQV275...1200PA648-3 Governer no. : 0 421 813 535 Contr.-rod trav.mm: 11.20...11.30 Del.quantity cm3/: 13.3...13.5 Customer-spec. information Customer : RVI 100H.: (13.0...13.8) : MIDS062030 Engine cm3/:0.5Dispersion 1st version kW : 150.0 Speed 1/min: 2400 100H.: (0.9) TEST BENCH REQUIREMENTS 1/min: 275.0 2nd speed Contr.-rod trav. m: 7.50...7.70 Del.quantity cm3/: 1.5...2.1 100H.: (1.2...2.4) Dispersion cm3/: 0.8 100H.: (1.2) Calibrating-oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 025 (B) Setting of injection pump with Inlet press., bar: 1.50 externally-mounted governor Calibrating nozzle-holder SLEEVE TRAVELS 1st speed 1/min: 275
Sleeve travel mm: 1.20...1.40
2nd speed 1/min: 400
Sleeve travel mm: 3.50...3.80 assembly : 1 688 901 019 Opening pressure, bar : 207...210 3rd speed 1/min: 850 Perforated-plate Sleeve travel mm: 6.10...6.40 4th speed 1/min: 1200 diameter mm : 0,8 Sleeve travel mm: 8.40...8.60 Test inj. tubing : 1 680 750 075 SLEEVE POSITION Control-lever position Outside diameter Degree: -1 17min: 1210 x Wall thickness : 8.00x2.50x1000 Cont.-rod travelmm: 15.20...17.80 x Length mm (A) Injection pump setting values FULL-LOAD DELIV. AT FULL-LOAD STOP Insp. values in parentheses Set constant delivery quant. 1st version 1/min: 1200 per values ____ Speed Del.quantity cm3/: 133.0...135.0 1000H.: (130.0...138.0) Dispersion cm3/: 5.00 1000H.: (9.00) START OF DELIVERY Test pressure, bar: 25...27

HIGHEST RATED SPEED 1st version Control-lever position degrees: 118...126 Testing: 1st c-rod trav.mm : 10.20 Speed 1/min : 1255...1265 2nd c-rod trav.mm : 4.000 Speed 1/min: 1360...1390 th speed 1/min: 1500 4th speed C-rod trav.mm : 11.20...11.30 LOWEST RATED SPEED I Control-lever position degrees: 65...73 Testing: 1/min : 200 Speed C-rod trav.mm min : 9.30 Speed 1/min : 275 C-rod trav.mm : 6.20...6.40 CONSTANT REGULATION 1/min: 275...360 Speed SWITCH-OVER POINT 1/min : 195 (215) Speed FUEL-DELIVERY CHARACTERISTICS 1/min : 750 Speed Del.quantity cm3/: 116.0...122.0 1000H.: (113.0...125.0)

| BOSCH INJ. PUMP TEST SPECIFICATIONS | | Prestroke mm : | 2.602.70 (2.552.75) |
|--|--|--|-------------------------------------|
| Note inst. in remarks column | | Contra-red tray.mm: | 9.0012.00 1-5-3-6-2-4 |
| Test sheet : Edition : Superceeded : Calibrating oil : | VOL 10.0 S I 09.03.87 | , and a conference of the conf | |
| Calibrating oil : | ISO-4113 | SD ang. spacing CS: Tolerance + - : | 0-60-120-180-240-300 0.50 (0.75) |
| Combination no. : | 0 401 846 529 I | SD mark cyl. no. : | |
| Injection pump Pump designation : EP type number : | PE6P120A320RS3186 | BASIC SETTING | · |
| Governor | RQV2501025PA657-13 | 1st speed 1/mi: | 700 |
| Governer no. : | 0 421 813 592 | Contra-rod trav.mm: | 11.4011.50 |
| Customer-spec. info Customer : | rmation 1 | Del.quantity cm3/: | 19.619.9 |
| Engine : | | 100H.: | (19.320.2) |
| 1st version kW : | • | Dispersion cm3/: | 0.5 |
| Speed 1/min: | | 100H.: | (0.9) |
| TEST BENCH REQUIREM | ENTS | <pre>2nd speed 1/min: Contrrod trav. m: Del.quantity cm3/:</pre> | 250.0 |
| Calibrating-oil inlet temp. C: | 3842 | 100H.: | (1.42.4) |
| Overflow valve : | 1 417 413 025 | Dispersion cm3/: 100H.: | (0.7) |
| Inlet press., bar : | 1.50 | (B) Setting of injer externally-moun | ction pump with ted governor |
| Calibrating nozzle- assembly : | holder 1 1 688 901 019 1 | SLEEVE TRAVELS 1st speed 1/min: Sleeve travel mm: | 250 1.201.30 |
| Opening pressure, bar : | 207210 | 2nd speed 1/min: Sleeve travel mm: 3rd speed 1/min: | 430 3.503.80 |
| Perforated-plate diameter mm : | 0,8 | Sleeve travel mm: 4th speed 1/min: Sleeve travel mm: | 6.406.60 900 6.406.60 |
| Test inj. tubing : | 1 680 750 067 | 5th speed 1/min: Sleeve travel mm: | |
| Outside deameter x Wall thickness x Length mm : (A) Injertion pump Insp. values in Set constant de | setting välues parentheses livery quant. | SLEEVE POSITION Control-lever position Degree: Speed 1/min: Controd travelmm: FULL-LOAD DELIV. AT | -1 1080 15.2017.80 |
| per values START OF DELIVERY Test pressure, bar: | | 1st version Speed 1/min: Charge press. hPa : | |

```
Del.quantity cm3/: 196.5...199.5
            1000H.: (193.5...202.5)
cm3/: 5.00
Dispersion
            1000H.: (9.00)
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 58...66
Testing:
1st c-rod trav.mm : 10.40
  Speed 1/min: 1055...1065
2nd c-rod trav.mm : 4.00
          1/min : 1110...1140
  Speed
            1/min: 1250
4th speed
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 4...12
Testing:
            1/min : 100
Speed
C-rod trav.mm min: 5.40
Speed 1/min: 250
C-rod trav.mm
                  : 3.90...4.10
CONSTANT REGULATION
Speed
            1/min : 250...350
 compensator (LDA, ADA, ALDA)
1st version
Setting
            1/min : 500
Speed
            hPa : 1000
Pressure
Contr.-rod trav.mm: 11.40...11.50
Measurement
            1/min : 500
Speed
1st pressure hPa
                  : 8.90...9.10
  C-rod trav.mm
2nd pressure hPa
                  : 770
  C-rod trav.mm : 11.20...11.30
3rd pressure hPa : 420
                  : 9.40...9.60
  C-rod trav.mm
FUEL-DELIVERY CHARACTERISTICS
Charge press. hPa : -
           1/min : 700
Speed
Del.quantity cm3/: 148.5...151.5
1000H.: (145.5...154.5)
```

```
: 1-5-3-6-2-4
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      Cam sequence
Note inst. in remarks column
                                                      SD ang. spacing ^{\circ} CS: 0-60-120-180-240-300 Tolerance + - ^{\circ} : 0.50 (0.75)
Test sheet
                    : DAF 11,6 Y5
Edition
                    : 02.12.86
Superceeded
Calibrating oil
                    : ISO-4113
                                                      BASIC SETTING
Combination no.
                    : 0 401 846 536
                                                      1st speed
                                                                      1/mi: 850
                                                      Contr.-rod trav.mm: 11.70...11.80
Injection pump
Pump designation : PE6P120A320RS415-1
EP type number
                                                      Del.quantity cm3/: 18.9...19.1
                    : 0 411 826 123
Governor
                                                                     100H.: (18.6...19.4)
Governor design.
                    : RQ250/1000PA417-3
                    : 0 421 801 267
Governer no.
                                                      Dispersion
                                                                    cm3/:0.5
Customer-spec. information
Customer
                    : DAF
                                                                     100H.: (0.9)
                    : DKX 1160SB
                                                                     1/min: 250.0
Engine
                                                      2nd speed
                                                      Contr.-rod trav. m: 6.7...6.9
Del.quantity cm3/: 1.4...2.0
100H.: (1.1...2.3)
Dispersion cm3/: 0.8
100H.: (1.2)
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                    : 38...42
Overflow valve
                                                      SLEEVE POSITION
                                                      Control-lever position
                    : 1 417 413 025
                                                                   Degree: -1
                                                                    17min: 700
Inlet press., bar : 1.50
                                                      Speed
                                                      Cont.-rod travelmm: 15.60...16.40
Calibrating nozzle-holder
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
 assembly
             : 1 688 901 019
Opening.
                                                      1st version
                                                      Speed
 pressure, bar
                    : 207...210
                                                                    1/min: 850
                                                      Charge press. hPa: 700
                                                      Del.quantity cm3/: 189.0...191.0
1000H.: (186.0...194.0)
Dispersion cm3/: 5.00
1000H.: (9.00)
Perforated-plate
 diameter mm
                    : 0,8
Test inj. tubing : 1 680 750 067
                                                      HIGHEST RATED SPEED
Outside diameter
x Wall thickness
                                                      Setting point:
                  : 6.00x1.50x1000
x Length mm
                                                                   1/min : 700
                                                      Speed
                                                      Contra-rod trav.mm: 16.0
(A) Injection pump setting values
    Insp. values in parentheses
                                                      Testing:
    Set constant delivery quant.
                                                      1st c-rod trav.mm : 10.70
                                                                   1/min: 1035...1050
                                                        Speed
    per values
                                                      2nd c-rod trav.mm: 4.00
START OF DELIVERY
                                                                   1/min : 1100...1130
                                                        Speed
                                                                   1/min: 1250
Test pressure, bar: 25...27
                                                      4th speed
                                                        C-rod trav.mm : 0.00...1.00
Prestroke mm
                    : 2.80...2.90
                    : (2.75...2.95)
                                                      LOWEST RATED SPEED I
Contr.-rod trav.mm: 9.00...12.00
                                                      Setting point w/out aux. spring
A20
```

Speed 1/min : 250 Contr.-rod trav.mm: 6.5 Testing: Speed 1/min: 100 C-rod trav.mm min: 7.40 Speed 1/min: 250 : 6.40...6.60 : 2.00 C-rod trav.mm C-rod trav.mm Speed 1/min: 450...490 TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min : 850 C-rod trav.mm : 11.90...12.00 2nd speed 1/min : 1000 C-rod trav.mm : 11.80...12.00 compensator (LDA,ADA,ALDA) 1st version Setting Speed 1/min : 600 hPa : 700 Pressure Contr.-rod trav.mm: 11.70...11.80 Measurement 1/min: 600 Speed 1st pressure hPa : -C-rod trav.mm : 10.30...10.50 2nd pressure hPa : 310 C-rod trav.mm : 11.40...11.50 3rd pressure hPa : 250 C-rod trav.mm : 10.60...10.90 FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : -1/min : 600 Speed Del.quantity cm3/: 140.0...142.0 1000H.: (137.0...145.0) Remarks:

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BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                             Test pressure, bar: 25...27
Note inst. in remarks column
                                                             Prestroke mm
                                                                                   : 4.00...4.10
                                                                                   : (3.95...4.15)
                                                             Contr.-rod trav.mm: 9.00...12.00
Test sheet
Edition
Superceeded
                    : MB 11,0 M
                     : 12.09.86
                                                             Cam sequence : 6- 3- 5- 2- 4- 1
Superceeded : 1.86
Calibrating oil : ISO-4113
                                                             SD ang. spacing CS: 0-45-120-165-240-285
Tolerance + - : 0.50 (0.75)
Combination no. : 0 401 846 741
Injection pump
Pump designation : PE6P110A320LS3814
                                                             SD mark cyl. no. : 6
EP type number
                    : 0 411 816 721
                                                             BASIC SETTING
Governor
Governor design. : RQV350...1150PA378R
Governer no. : 0 421 813 294
                                                             1st speed 1/mi: 1150
                                                             Contr.-rod trav.mm: 12.70...12.80
Customer-spec. information
                     : DAIMLER-BENZ
Customer
                                                             Del.quantity cm3/: 13.4...13.6
Engine
                      : 0M421
                                                                             100H.: (13.1...13.8)
1st version kW : 159.0
               1/min: 2300
                                                                             cm3/:0.4
                                                             Dispersion
Speed
2nd version kW : 159
                1/min: 2300
                                                                             100H.: (0.8)
Speed
                                                            2nd speed 1/min: 350.0

Contr.-rod trav. m: 8.2...8.4

Del.quantity cm3/: 1.3...1.9

100H.: (1.0...2.1)

Dispersion cm3/: 0.4

100H.: (0.7)
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                      : 38...42
Overflow valve
                      : 1 417 413 025
                                                                            1/min: 1130
                                                             1st speed
                                                            Contr.-rod trav.mm: 12.7...12.8
Del.quantity cm3/: 12.3...12.5
100H.: (-)
Dispersion cm3/: 0.4
100H.: (0.8)
2nd speed 1/min: 350
Inlet press., bar: 1.50
Overflow
 quantity min. 1/h: 100...110
Calibrating nozzle-holder
                                                             Contr.-rod trav.mm: 8.20...8.40
               : 0 681 343 009
 assembly
                                                            Del.quantity cm3/: 1.3...1.9
100H.: (-)
Dispersion cm3/: 0.4
100H.: (0.7)
Opening
pressure, bar : 172...175
Test inj. tubing : 1 680 750 015
                                                             (B) Setting of injection pump with externally-mounted governor
Outside diameter
                                                             SLEEVE TRAVELS
x Wall thickness
                     : 6.00x1.50x600
                                                             1st speed 1/min: 300
x Length mm
                                                               Sleeve travel mm: 0.60...0.90
                                                            2nd speed 1/min: 580
Sleeve travel mm: 3.60...3.70
3rd speed 1/min: 870
(A) Injection pump setting values
     Insp. values in parentheses
     Set constant delivery quant.
                                                               Sleeve travel mm: 5.20...5.30
    per values _____
                                                             4th speed 1/min: 1150
                                                               Sleeve travel mm: 7.60
START OF DELIVERY
```

SLEEVE POSITION Control-lever position Degree: -1 Speed 17min: 1150 Cont.-rod travelmm: 15.20...17.80 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version 1/min: 1150 Speed Del.quantity cm3/: 134.0...136.0 1000H.: (131.5...138.5) cm3/ : 4.00 1000H.: (8.00) Dispersion 2nd version 1/min: 1130 Speed Del.quantity cm3/: 123.0...125.0 1000H.: (120.0...128.0) Dispersion cm3/ : 4.01000H.: (8.0) HIGHEST RATED SPEED 1st version Control-lever position degrees: 62...70 Testing: 1st c-rod trav.mm : 11.70 1/min: 1180...1190 Speed 2nd c-rod trav.mm: 4.00 1/min: 1285...1315 Speed 1/min : 1400 4th speed C-rod tray.mm : 0.00...1.00 2nd version Control-lever position degrees: 62...70 Testing: 1st c-rod trav.mm : 11.70 1/min: 1180...1190 Speed 2nd c-rod trav.mm : 4.00 1/min : 1285...1315 Speed 1/min : 1400 4th speed C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 12...20 Testing: 1/min : 100 Speed C-rod trav.mm min: 8.50 1/min : 350 Speed C-rod trav.mm : 8.20...8.40

1/min: 375...485

SWITCH-OVER POINT 1/min: 270 (290) Speed FUEL-DELIVERY CHARACTERISTICS Speed 1/min: 600 Del.quantity cm3/: 113.0...117.0 1000H.: (110.0...120.0) cm3/:6.00Dispersion 1000H.: (9.00) 1/min: 1150 Speed Del.quantity cm3/: 93.0...97.0 * 1000H.: (90.0...100.0) cm3/: 6.00 1000H.: (9.00) Dispersion 1/min: Speed Del.quantity cm3/: -1000H.: (-)

Remarks:

Speed

CONSTANT REGULATION

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst, in remarks column

Test sheet : VOL 10,0 0
Edition : 12.09.86
Superceeded : 5.84
Calibrating oil : ISO-4113

Combination no. : 0 401 846 745

Injection pump

Pump designation : PE6P110A320RS3080

EP type number : 0 411 816 722

Governor

Governor design. : RQV250...1100PA589

Governer no. : 0 421 813 307

Customer-spec. information Customer : VOLVO

: TD100GA Engine

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C

inlet temp. : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Calibrating nozzle-holder

: 0 681 343 009 assembly

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter

x Wall thickness

: 6.00x1.50x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values ____

START OF DELIVERY

Test pressure, bar: 25...27

: 3.50...3.60 Prestroke mm

: (3.45...3.65)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1-5- 3- 6- 2-

Control-lever SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) position degrees: 59...67 Testing: SD mark cyl. no. : 1 1st c-rod trav.mm : 11.30 Speed 1/min: 1160...1170 BASIC SETTING 2nd c-rod trav.mm : 4.00 Speed 1/min: 1220...1250
4th speed 1/min: 1350
C-rod trav.mm: 0.00...1.00 1/mi: 700 1st speed Contr.-rod trav.mm: 12.30...12.40 LOWEST RATED SPEED I Del.quantity cm3/: 16.7...16.9 Control-lever position degrees: 4...12 100H.: (16.4...17.2) Testing: Dispersion cm3/:0.41/min : 100 Speed C-rod trav.mm min: 5.30 100H.: (0.7) Speed 1/min: 250 : 3.80...4.00 C-rod trav.mm 2nd speed 1/min: 250.0 Contr.-rod trav. m: 3.8...4.0 Del.quantity cm3/: 1.5...1.9 CONSTANT REGULATION 1/min : 270...380 Speed 100H.; (1.2...2.1) cm3/: 0.3 Dispersion compensator (LDA, ADA, ALDA) 100H.: (0.6) (B) Setting of injection pump with externally-mounted governor 1st version Setting 1/min : 500 hPa : 900 Speed Pressure SLEEVE TRAVELS 1st speed 1/min: 250 Contr.-rod trav.mm: 12.30...12.40 Sleeve travel mm: 1.20...1.30 2nd speed 1/min: 370 Measurement 1/min : 500 Sleeve travel mm: 2.60...3.00 Speed 3rd speed 1/min: 430
Sleeve travel mm: 3.50...3.90
4th speed 1/min: 1160
Sleeve travel mm: 8.10...8.30 1st pressure hPa : -: 9.80...9.90 C-rod tray.mm 2nd pressure hPa : 610 C-rod trav.mm : 12.10...12.20 3rd pressure hPa : 280 5th speed 1/min: 1210 Sleeve travel mm: 9.40...9.60 C-rod trav.mm : 10.10...10.30 SLEEVE POSITION FUEL-DELIVERY CHARACTERISTICS Control-lever position Charge press. hPa: Speed 1/min: 700
Del.quantity cm3/: 121.0...124.0
1000H.: (118.0...127.0) Degree: -1 Speed 1/min: 1180 Cont.-rod travelmm: 15.20...17.80 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version 1/min: 700 Speed Charge press. hPa: 900 Remarks: Del.quantity cm3/: 167.0...169.0 1000H.: (164.0...172.0) Dispersion cm3/: 4.00 1000H.: (7.50)

HIGHEST RATED SPEED

1st version

BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Note inst. in remarks column Test sheet : VOL 10,0 01 SD mark cyl. no. : 1 : 12.09.86 Edition Superceeded : 12.82 BASIC SETTING : ISO-4113 Calibrating oil 1st speed 1/mi: 700 Combination no. : 0 401 846 752 Contr.-rod trav.mm: 12.30...12.40 Injection pump Pump designation : PE6P110A320RS3080 Del.quantity cm3/: 16.7...16.9 EP type number : 0 411 816 722 100H.: (16.4...17.2) Governor Governor design. : RQV250...1025PA589 Governer no. : 0 421 813 332 cm3/:0.4Dispersion Customer-spec. information 100H.: (0.7) Customer : VOLVO 2nd speed 1/min: 250.0 Contr.-rod trav. m: 3.8...4.0 Engine : TD100GA-TD101GA Del.quantity cm3/: 1.5...1.9 100H.: (1.2...2.1) TEST BENCH REQUIREMENTS cm3/: 0.3 100H.: (0.6) Dispersion Calibrating-oil inlet temp. OC : 38...42 (B) Setting of injection pump with Overflow valve externally-mounted governor : 1 417 413 025 SLEEVE TRAVELS 1st speed 1/min: 250 Inlet press., bar: 1.50 Sleeve travel mm: 1.20...1.30 2nd speed 1/min: 370 Calibrating nozzle-holder : 0 681 343 009 Sleeve travel mm: 2.60...3.00 assembly 3rd speed 1/min: 430 Sleeve travel mm: 3.50...3.90 Opening pressure, bar : 172...175 4th speed 1/min: 1090 Sleeve travel mm: 8.50...8.70 1/min: 1150 5th speed Sleeve travel mm: 9.60...9.80 Test inj. tubing : 1 680 750 015 Outside diameter SLEEVE POSITION x Wall thickness Control-lever position : 6.00x1.50x600 Degree: -1 1/min: 1090 x Length mm Cont.-rod travelmm: 15.20...17.80 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. FULL-LOAD DELIV. AT FULL-LOAD STOP per values ____ 1st version START OF DELIVERY 1/min: 700 Speed Charge press. hPa: 900
Del.quantity cm3/: 167.0...169.0
1000H.: (164.0...172.0)
Dispersion cm3/: 4.00 Test pressure, bar: 25...27 Pr_stroke mm : 3.50...3.60 : (3.45...3.65) Contr.-rod trav.mm: 9.00...12.00 1000Ha: (7.50) Cam sequence : 1-5- 3- 6- 2- 4 HIGHEST RATED SPEED 1st version

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Control-lever
 position degrees: 61...67
Testing:
1st c-rod trav.mm : 11.30
  Speed
           1/min : 1085...1095
2nd c-rod trav.mm : 4.00
             1/min: 1140...1170
  Speed
  th speed 1/min: 1300
C-rod trav.mm: 0.00...1.00
4th speed
LOWEST RATED SPEED I
Control-lever
 position degrees: 4...12
Testing:
             1/min : 100
Speed
C-rod trav.mm min : 5.30
Speed 1/min : 250
C-rod trav.mm : 3.80...4.00
CONSTANT REGULATION
             1/min: 270...380
Speed
 compensator (LDA, ADA, ALDA)
1st version
Setting
             1/min : 500
hPa : 900
Speed
Pressure
Contr.-rod trav.mm: 12.30...12.40
Measurement
Speed
             1/min: 500
1st pressure hPa : -
 C-rod trav.mm : 9.80...9.90
2nd pressure hPa : 610
  C-rod trav.mm : 12.10...12.20
3rd pressure hPa : 280
  C-rod trav.mm : 10.10...10.30
FUEL-DELIVERY CHARACTERISTICS
Charge press. hPa : -
Speed 1/min : 70
             1/min : 700
Del.quantity cm3/: 121.0...124.0
             1000H.: (118.0...127.0)
Remarks:
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85A

| BOSCH INJ. PUMP TEST SPECIFICATIONS | SD ang. spacing ⁰ CS: 0-60-120-180-240-300 Tolerance + - 0.50 (0.75) |
|---|---|
| Note inst. in remarks column | |
| Test sheet : VOL 10.0 Q8 Edition : 23.09.86 Superceeded : - Calibrating oil : ISO-4113 | SD mark cyl. no. : 1 BASIC SETTING |
| Combination no. : 0 401 846 757 | 1st speed |
| Injection pump | Contrrod trav.mm: 9.009.10 |
| Pump designation : PE6P110A320RS3108 EP type number : 0 411 816 727 | Del.quantity cm3/: 9.29.4 100H.: (8.99.7) |
| Governor Governor design. : RQV2501100PA649 Governer no. : 0 421 813 346 | Dispersion cm3/: 0.4 |
| Customer-spec. information Customer : VOLVO | 100H.: (0.7) |
| Engine : THD100EA | 2nd speed |
| TEST BENCH REQUIREMENTS | Del.quantity cm3/: 3.03.2 Dispersion cm3/: 0.3 100H.: (0.6) |
| Calibrating-oil inlet temp. °C : 3842 | (B) Setting of injection pump with |
| Overflow valve : 1 417 413 025 | externally-mounted governor SLEEVE TRAVELS |
| Inlet press., bar : 1.50 | 1st speed 1/min: 250 Sleeve travel mm: 1.101.30 2nd speed 1/min: 500 |
| Calibrating nozzle-holder assembly : 0 681 343 009 | Sleeve travel mm: 4.104.90 3rd speed 1/min: 700 Sleeve travel mm: 6.306.70 |
| Opening pressure, bar : 172175 | 4th speed 1/min: 950 Sleeve travel mm: 6.306.70 5th speed 1/min: 1100 |
| Test inj. tubing : 1 680 750 015 | Sleeve travel mm: 7.007.50 |
| Outside diameter x Wall thickness | SLEEVE POSITION Control-lever position Degree: -1 |
| × Length mm : 6.00x1.50x600 | Speed 17min: 1175 Controd travelmm: 15.2017.80 |
| (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values | FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version |
| START OF DELIVERY Test pressure, bar: 2527 | Speed 1/min: 700 Del.quantity cm3/: 92.094.0 1000H.: (89.097.0) Dispersion cm3/: 4.00 |
| Prestroke mm : 3.003.10 : (2.953.15) | 1000H.: (7.50) |
| Contrrod trav.mm: 9.0012.00 Cam sequence : 1-5- 3- 6- 2- 4 | HIGHEST RATED SPEED 1st version Control-lever position degrees: 6169 |
| ' | positivii dogi dos. dission |

Testing: 1st c-rod trav.mm : 8.00 Speed 1/min: 1160...1170 2nd c-rod trav.mm: 4.00 Speed 1/min: 1220...1250 4th speed 1/min: 1350 C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever

position degrees: 7...15

Testing:

Speed 1/min : 100 C-rod trav.mm min : 6.80 Speed 1/min: 250
C-rod trav.mm : 5.30...5.50
C-rod trav.mm : 2.00
Speed 1/min: 350...410

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: 1-5-3-6-2-4
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                        Cam sequence
Note inst. in remarks column
Test sheet
                                                        SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                     : VOL 10,0 Q2
                    : 23.09.86
: 5.84
Edition
Superceeded
                   : ISO-4113
Calibrating oil
                                                        SD mark cyl. no. : 1
Combination no.
                     : 0 401 846 758
                                                        BASIC SETTING
                                                                         1/mi: 700
Injection pump
                                                        1st speed
Pump designation : PE6P110A320RS3108Z
                                                        Contr.-rod trav.mm: 10.50...10.60
EP type number
                     : 0 411 816 728
Governor
Governor design. : RQV250...1100PA649
Governer no. : 0 421 813 346
                                                        Del.quantity cm3/: 12.2...12.4
                                                                        100H.: (11.9...12.7)
Customer-spec. information
                     : VOLVO
                                                                       cm3/:0.4
Customer
                                                        Dispersion
                     : THD100EB
                                                                        100H.: (0.7)
Engine
                                                        2nd speed 1/min: 250.0
Contr.-rod trav. m: 5.3...5.5
Del.quantity cm3/: 3.0...3.4
100H.: (-)
1st version kW : 160.0
Speed
               1/min: 2200
TEST BENCH REQUIREMENTS
                                                                       cm3/: 0.3
100H.: (0.6)
                                                        Dispersion
Calibrating-oil inlet temp. OC
                     : 38...42
                                                         (B) Setting of injection pump with
Overflow valve
                                                             externally-mounted governor
                     : 1 417 413 025
                                                        SLEEVE TRAVELS
                                                        1st speed 1/min: 250
Sleeve travel mm: 1.10...1.30
2nd speed 1/min: 500
Sleeve travel mm: 4.10...4.90
Inlet press., bar: 1.50
Calibrating nozzle-holder
                   : 0 681 343 009
 assembly
                                                                       1/min: 700
                                                        3rd speed
                                                           Sleeve travel mm: 6.30...6.70
Opening
pressure, bar : 172...175
                                                        4th speed
                                                                       1/min: 950
                                                           Sleeve travel mm: 6.30...6.70
                                                        Sth speed 1/min: 1100
Sleeve travel mm: 7.00...7.50
Test inj. tubing : 1 680 750 015
                                                        SLEEVE POSITION
Outside diameter
                                                        Control-lever position
x Wall thickness
                   : 6.00x1.50x600
                                                                      Degree: -1
x Length mm
                                                                       17min: 1175
                                                        Speed
                                                        Cont.-rod travelmm: 15.20...17.80
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values ____
                                                        1st version
                                                        Speed 1/min: 700 Charge press. hPa: 750
START OF DELIVERY
Test pressure, bar: 25...27
                                                        Del.quantity cm3/: 122.0...124.0
                                                                      1000H.: (119.0...127.0)
                     : 3.00...3.10
Prestroke mm
                                                        Dispersion cm3/: 4.00
1000H.: (7.50)
                     : (2.95...3.15)
Contr.-rod trav.mm: 9.00...12.00
B03
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HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 61...69
Testing:
1st c-rod trav.mm: 9.50
  Speed 1/min: 1160...1170
2nd c-rod trav.mm: 4.00
            1/min : 1225...1255
  Speed
            1/min : 1350
4th speed
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 7...15
Testing:
Speed
            1/min : 100
C-rod trav.mm min: 6.80
            1/min : 250
Speed
               : 5.30...5.50
C-rod trav.mm
                  : 2.00
C-rod trav.mm
            1/min : 350...410
Speed
 compensator (LDA,ADA,ALDA)
1st version
Setting
            1/min : 500
Speed
            hPa : 750
Pressure
Contr.-rod trav.mm: 10.50...10.60
Measurement
            1/min : 500
Speed
1st pressure hPa : -
                  : 9.60...9.80
  C-rod trav.mm
                  : 290
2nd pressure hPa
                  : 9.90...10.00
  C-rod trav.mm
3rd pressure hPa
                  : 330
  C-rod trav.mm
                  : 10.20...10.40
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : -
Speed
           1/min : 700
Del.quantity cm3/: 106.0...108.0
1000H.: (103.0...111.0)
Remarks:
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BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Note inst. in remarks column Test sheet : SCA 11,0 Y SD mark cyl. no. : 1 : 09.03.87 Edition Superceeded : 5.85 BASIC SETTING Calibrating oil : ISO-4113 1st speed 1/mi: 600 Combination no. : 0 401 846 764 Contr.-rod trav.mm: 12.40...12.50 Injection pump Pump designation : PE6P110A720RS3115 Del.quantity cm3/: 11.9...12.1 EP type number : 0 411 816 735 100H.: (11.7...12.3) Governor Governor design. : RQV200...1100PA468 : 0 421 813 364 cm3/: 0.5Governer no. Dispersion 100H.: (0.7) Customer-spec. information : SAAB-SCANIA Customer 2nd speed i/min: 225.0 Contr.-rod trav. m: 5.4...5.6 Del.quantity cm3/: 2.0...2.4 Dispersion cm3/: 0.2 : DN11 01 Engine TEST BENCH REQUIREMENTS 100H.: (0.4) Calibrating-oil inlet temp. OC : 38...42 (B) Setting of injection pump with externally-mounted governor Overflow valve : 1 417 413 025 SLEEVE TRAVELS 1st speed 1/min: 225 Sleeve travel mm: 0.90...1.00 Inlet press., bar : 1.50 2nd speed 1/min: 360 Sieeve travel mm: 2.60...2.90

3rd speed 1/min: 560

Sieeve travel mm: 4.30...4.60

4th speed 1/min: 1150

Sleeve travel mm: 8.40...8.60 Calibrating nozzle-holder : 0 681 343 009 assembly Opening pressure, bar : 172...175 5th speed 1/min: 1250 Sleeve travel mm: 9.50...9.80 Test inj. tubing : 1 680 750 015 SLEEVE POSITION Control-lever position Outside diameter x Wall thickness Degree: -1 1/min: 1150 Speed : 6.00x1.50x600 x Length mm Cont.-rod travelmm: 15.20...17.80 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. FULL-LOAD DELIV. AT FULL-LOAD STOP per values 1st version Speed 1/min: 600
Del.quantity cm3/: 119.0...121.0
1000H.: (117.0...123.0)
Dispersion cm3/: 5.00 START OF DELIVERY Test pressure, bar: 25...27 : 3.30...3.40 1000H.: (7.00) Prestroke mm : (3.25...3.45) Contr.-rod trav.mm: 9.00...12.00 HIGHEST RATED SPEED Cam sequence : 1-5- 3- 6- 2- 4 1st version Control-lever position degrees: 112...120

Setting point:

Speed 1/min : 1150 Contr.-rod trav.mm: 16.5

Testing:

1st c-rod trav.mm : 11.40

1/min : 1140...1150 Speed

2nd c-rod trav.mm : 4.00

Speed 1/min: 1250...1280 4th speed 1/min: 1400 C-rod trav.mm: 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 61...69 Setting point w/out aux. spring

1/min : 225 Speed

Contr.-rod trav.mm: 5.5

Testing:

1/min : 100 Speed C-rod tray.mm min: 6.90

1/min : 225 Speed

C-rod trav.mm : 5.40...5.60 C-rod trav.mm : 2.00

1/min: 330...390 Speed

FUEL-DELIVERY CHARACTERISTICS

1/min : 1100 Speed

Del.quantity cm3/: 119.5...124.5

1000H.: (118.0...126.0)

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Cam sequence : 1- 5- 3- 6- 2- 4
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
Test sheet
                                                        SD ang. spacing ^{0}CS: 0-60-120-180-240-300 Tolerance + - ^{0}: 0.50 (0.75)
                    : VOL 10,0 03
Edition
                    : 10.12.86
Superceeded
                    : 4.85
Calibrating oil : ISO-4113
                                                        SD mark cyl. no. : 1
Combination no.
                    : 0 401 846 768
                                                        BASIC SETTING
Injection pump
                                                                        1/mi: 700
                                                        1st speed
Pump designation : PE6P110A320R$3080-1
                                                        Contr.-rod trav.mm: 13.20...13.30
EP type number
                   : 0 411 816 734
Governor
Governor design. : RQV250...1025PA589
                                                        Del.quantity cm3/: 17.9...18.2
Governer no.
                    : 0 421 813 332
                                                                       100H.: (17.7...18.5)
Customer-spec. information
                 VOLVO TD100FA
                                                                       cm3/:0.4
Customer
                                                        Dispersion
Engine
                                                                       100H.: (0.7)
1st version kW : 220.0
                                                        2nd speed
                                                                       1/min: 250.0
                                                       Contr.-rod trav. m: 4.3...4.5
Del.quantity cm3/: 1.5...1.9
100H.: (1.2...2.1)
Dispersion cm3/: 0.3
100H.: (0.6)
Speed
               1/min: 2050
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                     : 38...42
                                                        (B) Setting of injection pump with
Overflow valve
                                                            externally-mounted governor
                     : 1 417 413 025
                                                        SLEEVE TRAVELS
Inlet press., bar: 1.50
                                                        1st speed 1/min: 250
                                                        Sleeve travel mm: 1.20...1.30
2nd speed 1/min: 350
Sleeve travel mm: 2.20...2.80
Calibrating nozzle-holder
                   : 0 681 343 009
 assembly
                                                          d speed 1/min: 430
Sleeve travel mm: 3.50...3.90
                                                        3rd speed
Opening
pressure, bar : 172...175
                                                        4th speed
                                                                      1/min: 1080
                                                          Sleeve travel mm: 8.40...8.50
                                                        5th speed 1/min: 1150
Sleeve travel mm: 9.50...9.80
Test inj. tubing
                   : 1 680 750 015
Outside diameter
                                                        SLEEVE POSITION
                                                        Control-lever position
x Wall thickness
                                                                     Degree: -1
1/min: 108€
                    : 6.00x1.50x690
x Length mm
                                                        Speed
                                                        Cont.-rod travelmm: 15.20...17.80
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values ____
                                                        1st version
                                                                      1/min: 700
START OF DELIVERY
                                                        Speed
                                                        Charge press. hPa : 900
Test pressure, bar: 25...27
                                                        Del.quantity cm3/: 179.5...182.5
                                                                     1000H.: (177.0...185.0) cm3/: 4.00
Prestroke mm
                     : 3.00...3.10
                    : (2.95...3.15)
                                                        Dispersion
                                                                      1000H.: (7.50)
Contr.-rod trav.mm: 9.00...12.00
B07
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HIGHEST RATED SPEED 1st version Control-lever position degrees: 61...69 Testing: 1st c-rod trav.mm : 12.20 Speed 1/min: 1085...1095 2nd c-rod trav.mm : 4.00 1/min: 1160...1190 Speed h speed 1/min: 1300 C-rod trav.mm: 0.00...1.00 4th speed LOWEST RATED SPEED I Control-lever position degrees: 5...13 Testing: 1/min : 100 Speed C-rod trav.mm min : 5.80 Speed 1/min : 250 : 4.30...4.50 C-rod trav.mm CONSTANT REGULATION Speed 1/min : 270...380 compensator (LDA,ADA,ALDA) 1st version Setting 1/min : 500 Speed Pressure hPa : 900 Contr.-rod trav.mm: 13.20...13.30 Measurement 1/min: 500 Speed 1st pressure hPa : -: 10.50...10.60 C-rod trav.mm 2nd pressure hPa : 700 : 13.00...13.10 C-rod trav.mm 3rd pressure hPa : 300 C-rod trav.mm : 10.80...11.10 FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 900 1/min: 1000 Speed Del.quantity cm3/: 171.0...177.0 1000H.: (169.0...179.0) Charge press. hPa : -1/min : 700 Speed Del.quantity cm3/: 132.0...135.0 1000H.: (129.5...137.5)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 10.0 Edition : 12.09.86 Superceeded : 12.83 : VOL 10_0 02 Calibrating oil : ISO-4113

Combination no. : 0 401 846 769

Injection pump

Pump designation : PE6P110A320R\$3080-1

EP type number : 0 411 816 734

Governor

Governor design. : RQV250...1100PA589

: 0 421 813 307 Governer no.

Customer-spec. information Customer : VOLVO

: TD100F Engine

1st version kW : 220.0 1/min: 2200 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. C

: 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Calibrating nozzle-holder

: 0 681 343 009 assembly

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter x Wall thickness

x Length mm : 6.00x1.50x600

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values ____

START OF DELIVERY

Test pressure, bar: 25...27

: 3.00...3.10 Prestroke mm

: (2.95...3.15) Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1-5-3-6-2-4 HIGHEST RATED SPEED 1st version Control-lever SD ang. spacing⁰CS: 0-60-120-180-240-300 Tolerance + - 0 : 0.50 (0.75) position degrees: 59...67 Testing: 1st c-rod trav.mm: 12.20 SD mark cyl. no. : 1 Speed 1/min: 1160...1170
2nd c-rod trav.mm: 4.00
Speed 1/min: 1220...1250
4th speed 1/min: 1350 BASIC SETTING 1/mi: 700 1st speed C-rod trav.mm : 0.00...1.00 Contr.-rod trav.mm: 13.20...13.30 LOWEST RATED SPEED I Del.quantity cm3/: 18.0...18.2 Control-lever position degrees: 5..13 100H.: \$\frac{1}{3}7.7...18.5 Testing: Speed 1/min: 100 C-rod trav.mm min: 5.80 Speed 1/min: 250 cm3/: 0.4 Dispersion 100H.: (0.7) C-rod trav.mm : 4.30...4.50 1/min: 250.0 2nd speed Contr.-rod trav. m: 4.3...4.5
Del.quantity cm3/: 1.5...1.9
100H.: (-)
Dispersion cm3/: 0.3
100H.: (0.6) CONSTANT REGULATION 1/min: 270...380 Speed compensator (LDA_ADA_ALDA) (B) Setting of injection pump with 1st version externally-mounted governor Setting 1/min : 500 Speed hPa : 900 SLEEVE TRAVELS Pressure 1st speed 1/min: 250
Sleeve travel mm: 1.20...1.30
2nd speed 1/min: 350
Sleeve travel mm: 2.20...2.80
3rd speed 1/min: 430 Contr.-rod travamm: 13.20...13.30 Measurement 1/min : 500 Speed Sleeve travel mm: 3.50...3.90 1st pressure hPa 4th speed 1/min: 1160
Sleeve travel mm: 8.10...8.20
5th speed 1/min: 1230
Sleeve travel mm: 9.40...9.70 C-rod trav.mm : 10.50...10.60 2nd pressure hPa : 720 C-rod trav.mm : 13.00...13.10 3rd pressure hPa : 320 : 10.80...11.10 C-rod tray.mm SLEEVE POSITION FUEL-DELIVERY CHARACTERISTICS Control-lever position Degree: -1 17min: 1180 Speed 1st version Charge press. hPa: 900 Cont.-rod travelmm: 15.20...17.80 Speed 1/min: 1000 Del.quantity cm3/: 171.0...177.0 1000H.: (169.0...179.0) FULL-LOAD DELIV. AT FULL-LOAD STOP Charge press. hPa : -Speed 1/min : 700 1st version Speed 1/min: 700 Del.quantity cm3/: 132.0...135.0 1000H.: (129.5...137.5) Charge press. hPa : 900 Del.quantity cm3/: 180.0...182.0 1000H.: (177.0...185.0) Dispersion cm3/: 4.00 1000H.: (7.50)

B10

Note inst. in remarks column

Test sheet : VOL 12.0 K
Edition : 12.09.86
Superceeded : 7.85
Calibrating oil : ISO-4113

Combination no. : 0 401 846 772

Injection pump

Pump designation : PE6P12OA32ORS3118 EP type number : 0 411 826 726

Governor

Governor design. : RQV250...1025PA657 Governor no. : 0 421 813 368

Customer-spec. information Customer : V0LV0

Engine : TD121F

1st version kW : 282₄4 Spēed 1/min: 2050

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

inter temp. 0 . .

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Calibrating nozzle-holder

assembly : 1 688 901 019

Opening 207

pressure, bar : 207...210

Perforated-plate : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter x Wall thickness

x Length mm : 6.00x1.50x1000

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values _____

START OF DELIVERY

Test pressure, bar: 25...27

Del.quantity cm3/: 238.5...240.5 1000H.: (235.5...243.5) Prestroke mm : 2.60...2.70 : (2.55...2.75) Contr.-rod trav.mm: 9.00...12.00 Dispersion cm3/ : 5.00 Cam sequence : 1- 5- 3- 6- 2- 4 1000H.: (9.00) HIGHEST RATED SPEED 1st version SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Control-lever position degrees: 61...69 SD mark cyl. no. : 1 Testing: 1st c-rod trav.mm : 12.30 BASIC SETTING Speed 1/min: 1085...1095 2nd c-rod trav.mm : 4.00 Speed 1/min: 1150...1180 4th speed 1/min: 1250 C-roi trav.mm: 0.00...1.00 1st speed 1/mi: 700 Contr.-rod trav.mm: 13.30...13.40 Del.quantity cm3/: 23.8...24.0 LOWEST RATED SPEED I Control-lever 100H.: (23.5...24.3) position degrees: 6...14 Dispersion cm3/:0.5Testing: 1/min : 100 Speed 100H.: (0.9) C-rod trav.mm min : 4.80 Speed 1/min: 250 C-rod trav.mm: 3.30...3.50 C-rod trav.mm: 2.00 Speed 1/min: 285...345 2nd speed 1/min: 250.0 Contr.-rod trav. m: 3.3...3.5 Del.quantity cm3/: 1.8...2.3 100H.: (-) cm3/: 0.5 100H.: (0.7) compensator (LDA,ADA,ALPA) Dispersion (B) Setting of injection pump with 1st temsion externally-mounted governor Setting 1/min : 500 hPa : 1200 Speed Pressure SLEEVE TRAVELS Contr.-rod trav.mm: 13.30...13.40 1st speed 1/min: 250 Sleeve travel mm: 1.10...1.30 2nd speed 1/min: 500 Measurement Sleeve travel mm: 4.10...4.90

3rd speed 1/min: 700

Sleeve travel mm: 6.30...6.70

4th speed 1/min: 900

Sleeve travel mm: 6.30...6.70

5th speed 1/min: 1025 Speed 1/min: 500 1st pressure hPa : -C-rod trav.mm : 8.60...8.80 2nd pressure hPa : 780 C-rod trav.mm : 13.10...13.20 Sleeve travel mm: 7.30...7.90 3rd pressure hPa : 100 C-rod trav.mm : 9.10...9.40 SLEEVE POSITION Control-lever position FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : -Degree: -1 1/min: 1080 Speed 1/min: 700 Speed Del.quantity cm3/: 139.0...141.0 1000H.: (136.0...144.0) Cont.-rod travelmm: 15.20...17.80 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version Speed 1/min: 700 Charge press. hPa : 1200 Remarks:

: 2.60...2.70 : (2.55...2.75) BOSCH INJ. PUMP TEST SPECIFICATIONS Prestroke mm Note inst. in remarks column Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1-5-3-6-2-4 Test sheet Edition Superceeded : VOL 12,0 I : 25.09.86 : 11.83 Calibrating oil : ISO-4113 SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Combination no. : 0 401 846 773 SD mark cyl. no. : 1 Injection pump Pump designation : PE6P12OA32ORS3116 BASIC SETTING EP type number : 0 411 826 727 1st speed 1/mi: 700 Governor Governor design. : RQV250...1025PA657 Contr.-rod trav.mm: 11.40...11.50 Governer no. : 0 421 813 368 Customer-spec. information Del.quantity cm3/ : 19.6...19.8 : VOLVO Customer 100H.: (19.3...20.1) Engine : TD120G cm3/:0.5Dispersion 1st version kW : 242.7 1/min: 2050 100H.: (0.9) Speed TEST BENCH REQUIREMENTS 2nd speed 1/min: 250.0 Contr.-rod trav. m: 5.5...5.7
Del.quantity cm3/: 1.8...2.3
100H.: (1.5...2.6)
Dispersion cm3/: 0.5
100H.: (0.7) Calibrating-oil inlet temp. OC : 38...42 Overflow valve : 1 417 413 025 (B) Setting of injection pump with Inlet press., bar: 1.50 externally-mounted governor Calibrating nozzle-holder SLEEVE TRAVELS 1st speed 1/min: 250
Sieeve travel mm: 1.10...1.30
2nd speed 1/min: 500 : 1 688 901 019 assembly Opening pressure, bar : 207...210 Sleeve travel mm: 4.10...4.90 1/min: 700 3rd speed Perforated-plate Sleeve travel mm: 6.30...6.70 : 0,8 4th speed 1/min: 900 diameter mm Sleeve travel mm: 6.30...6.70 5th speed 1/min: 1025 Sleeve travel mm: 7.30...7.80 Test inj. tubing : 1 680 750 067 SLEEVE POSITION Outside diameter x Wall thickness Control-lever position : 6.00x1.50x1000 * Length mm Degree: -1 17min: 1080 Cont.-rod travelmm: 15.20...17.80 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. FULL-LOAD DELIV. AT FULL-LOAD STOP per values ____ 1st version 1/min: 700 START OF DELIVERY Speed Charge press. hPa: 700 Test pressure, bar: 25...27

```
Del.quantity cm3/: 196.5...198.5
             1000H.: (193.5...201.5)
             cm3/ : 5.00
Dispersion
             1000H.: (9.00)
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 58...66
Testing:
1st c-rod trav.mm : 10.40
Speed 1/min: 1065...1075
2nd c-rod trav.mm: 4.00
           1/min : 1125...1155
1/min : 1250
  Speed
4th speed
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 6...14
Testing:
Speed 1/min: 100 G-rod trav.mm min: 7.00
             1/min : 250
Speed
                  : 5.50...5.70
C-rod tray.mm
                   : 2.00
C-rod trav.mm
            1/min : 350...410
Speed
 compensator (LDA, ADA, ALDA)
1st version
Setting
Speed
             1/min : 500
             hPa : 700
Pressure
Contr.-rod trav.mm: 11.40...11.50
Measurement
Speed
             1/min : 500
1st pressure hPa
                   : 9.00...9.10
  C-rod trav.mm
2nd pressure hPa : 450
  C-rod trav.mm
                   : 11.20...11.30
3rd pressure hPa : 170
                   : 9.30...9.60
  C-rod trav.mm
FUEL-DELIVERY CHARACTERISTICS
Charge press. hPa : -
            1/min: 700
Speed
Del.quantity cm3/: 151.0...153.0
1000H.: (148.0...156.0)
```

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                         Cam sequence : 1-5- 3- 6- 2- 4
Note inst. in remarks column
                                                         $\text{SD}$ ang. spacing ^{0} CS: 0-60-120-180-240-300 Tolerance + - ^{10}: 0.50 (0.75)
Test sheet
                    : VOL 10,0 Q6
                    : 23.09.86
Edition
Superceeded
Superceeded : 5.85
Calibrating oil : ISO-4113
                                                         SD mark cyl. no. : 1
Combination no.
                    : 0 401 846 784
                                                         BASIC SETTING
                                                                          1/mi: 700
Injection pump
                                                          1st speed
Pump designation : PE6P110A320RS3108V
EP type number
                     : 0 411 816 737
                                                         Contr.-rod trav.mm: 13.70...13.80
Governor
Governor design. : RQV250...1100PA649
Governer no. : 0 421 813 346
                                                         Del.quantity cm3/: 18.0...18.2
                                                                         100Ha: (17.7...18.5)
Customer-spec. information
Customer
                    : VOLVO
                                                         Dispersion
                                                                         cm3/:0.4
                     : B10/THD101FD
                                                                         1004.: (0.7)
Engine
1st version kW : 210.0
                                                                         1/min: 250.0
                                                         2nd speed
                                                         Contr.-rod trav. m: 5.3...5.5

Del.quantity cm3/: 3.0...3.4

100H.: (2.7...3.6)

Dispersion cm3/: 0.3

100H.: (0.6)
               1/min: 2200
Speed
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. C
                     : 38...42
                                                          (B) Setting of injection pump with
Overflow valve
                                                              externally-mounted governor
                     : 1 417 413 025
                                                         SLEEVE TRAVELS
                                                         1st speed 1/min: 250
Sleeve travel mm: 1.10...1.30
2nd speed 1/min: 500
Inlet press., bar: 1.50
Calibrating nozzle-holder
                                                            Sleeve travel mm: 4.10...4.90
 assembly
                   : 0 681 343 009
                                                                       1/min: 700
                                                         3rd speed
                                                            Sleeve travel mm: 6.30...6.70
Opening
pressure, bar : 172...175
                                                                        1/min: 950
                                                         4th speed
                                                            Sleeve travel mm: 6.30...6.70
                                                         5th speed 1/min: 1100
Sleeve travel mm: 7.00...7.50
Test inj. tubing : 1 680 750 015
                                                         SLEEVE POSITION
Outside diameter
                                                         Control-lever position
x Wall thickness
                   : 6.00x1.50x600
                                                                       Degree: -1
x Length mm
                                                                        17min: 1175
                                                         Speed
                                                         Cont.-rod travelmm: 15.20...17.80
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                         FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values
                                                         1st version
START OF DELIVERY
                                                         Speed
                                                                        1/min: 700
                                                         Charge press. hPa : 1200
Del.quantity cm3/ : 180.0...182.0
1000H.: (177.0...185.0)
Test pressure, bar: 25...27
                     : 3.00...3.10
Prestroke mm
                     : (2.95...3.15)
                                                         Dispersion cm3/ : 4.00
Contr.-rod trav.mm: 9.00...12.00
                                                                       1000H.: (7.50)
B17
```

```
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 61...69
Testing:
1st c-rod trav.mm : 12.70
           1/min: 1160...1170
  Speed
2nd c-rod trav.mm: 4.00
  Speed
           1/min : 1240...1270
           1/min : 1350
4th speed
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 7...15
Testing:
            1/min: 100
Speed
C-rod trav.mm min : 6.80
           1/min : 250
Speed
                 : 5.30...5.50
C-rod trav.mm
                  : 2.00
C-rod trav.mm
           1/min : 345...405
Speed
 compensator (LDA,ADA,ALDA)
1st version
Setting
Speed
            1/min : 500
Pressure
           hPa : 1200
Contr.-rod trav.mm: 13.70...13.80
Measurement
            1/min : 500
Speed
1st pressure hPa
                  : 9.60...9.80
 C-rod trav.mm
2nd pressure hPa : 300
 C-rod trav.mm
                 : 10.00...10.10
3rd pressure hPa : 870
  C-rod trav.mm : 13.30...13.50
FUEL-DELIVERY CHARACTERISTICS
Charge press. hPa : -
           1/min: 700
Del.quantity cm3/: 106.0...108.0
            1000H.: (103.0...111.0)
Remarks:
```

BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - 0.50 (0.75)Note inst. in remarks column Test sheet Edition : VOL 10.0 Q4 : 09.03.87 SD mark cyl. no. : 1 Edition Superceeded : 5.85 BASIC SETTING Calibrating oil : ISO-4113 1st speed 1/mi: 700 Combination no. : 0 401 846 785 Contr.-rod trav.mm: 11.90...12.00 Injection pump Pump designation : PE6P110A320RS3108 Del.quantity cm3/: 15.2...15.4 EP type number : 0 411 816 727 100H.: (14.9...15.7) Governor Governor design. : RQV250...1100PA589 : 0 421 813 307 Governer no. Dispersion cm3/:0.4190H.: (0.7) Customer-spec. information Customer : VOLVO 1/min: 250.0 2nd speed Contr.-rod trav. m: 4.1...4.3 Engine : N10/TD101GB Del.quantity cm3/: 1.7...2.1 100H.: (1.4...2.3) TEST BENCH REQUIREMENTS cm3/: 0.3 100H.: (0.6) Dispersion Calibrating-oil inlet temp. "C : 38...42 (B) Setting of injection pump with Overflow valve externally-mounted governor : 1 417 413 025 SLEEVE TRAVELS 1st speed 1/min: 250 Inlet press., bar : 1.50 Sleeve travel mm: 1.20...1.30 2nd speed 1/min: 450
Sleeve travel mm: 3.70...4.10
3rd speed 1/min: 700
Sleeve travel mm: 6.40...6.60 Calibrating nozzle-holder : 0 681 343 009 assembly Opening pressure, bar : 172...175 1/min: 1000 4th speed Sleeve travel mm: 6.40...6.60 5th speed 1/min: 1160 Sleeve travel mm: 8.20...8.40 Test inj. tubing : 1 680 750 015 SLEEVE POSITION Outside diameter x Wall thickness Control-lever position Degree: -1 1/min: 1180 : 6.00x1.50x600 x Length mm Cont.-rod travelmm: 15.20...17.80 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. FULL-LOAD DELIV. AT FULL-LOAD STOP per values 1st version 1/min: 700 START OF DELIVERY Speed Charge press. hPa: 900 Del.quantity cm3/: 152.0...154.0 1000H.: (149.0...157.0) Test pressure, bar: 25...27 : 3.00...3.10 Prestroke mm cm3/ : 4.00 1000H.: (7.50) : (2.95...3.15) Dispersion Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1-5- 3- 6- 2-HIGHEST RATED SPEED 1st version

```
Control-lever
 position degrees: 59...67
Testing:
1st c-rod trav.mm: 10.90
  Speed 1/min: 1160...1170
2nd c-rod trav.mm: 4.00
          1/min : 1215...1245
  Speed
            1/min : 1350
4th speed
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 4...12
Testing:
            1/min : 100
Speed
C-rod trav.mm min: 5.60
Speed 1/min: 250
C-rod trav.mm
               : 4.10...4.30
                  : 2.00
C-rod trav.mm
            1/min : 310...370
Speed
 compensator (LDA, ADA, ALDA)
1st version
Setting
            1/min : 500
Speed
            hPa : 900
Pressure
Contr.-rod trav.mm: 11.90...12.00
Measurement
Speed
            1/min : 500
1st pressure hPa : -
                  : 10.10...10.20
 C-rod trav.mm
2nd pressure hPa
                  : 550
 C-rod trav.mm : 11.70...11.80
3rd pressure hPa
                  : 350
                  : 10.40...10.60
  C-rod trav.mm
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 900
            1/min : 1000
Speed
Del.quantity cm3/: 146.0...150.0
1000H.: (143.0...153.0)
Charge press. hPa : -
            1/min: 700
Speed
Del.quantity cm3/: 116.0...119.0
            1000H.: (113.0...122.0)
```

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                         : 1-5-3-6-2-4
                                                     Cam sequence
Note inst. in remarks column
Test sheet
                                                     SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)
                    : PEN 12,0 G
                    : 09.03.87
Edition
Superceeded
                    : 3.85
Calibrating oil
                                                     SD mark cyl. no. : 1
                 : ISO-4113
Combination no.
                    : 0 401 846 786
                                                     BASIC SETTING
                                                                     1/mi: 700
Injection pump
                                                      1st speed
Pump designation : PE6P120A320RS3075
                                                     Contr.-rod trav.mm: 9.80...9.90
EP type number
                 : 0 411 826 717
Governor
                                                     Del.quantity cm3/: 18.3...18.7
Governor design.
                    : RQ750PA694
                    : 0 421 801 241
Governer no.
                                                                    100H.: (18.1...18.9)
Customer-spec. information
                                                                   cm3/:0.5
                    : VOLVO-PENTA
                                                     Dispersion
Customer
                    : TD120BHC/BRC
                                                                    100H.: (0.9)
Engine
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. OC
                                                     1st version
                    : 38...42
                                                                    1/min: 700
                                                     Speed
                                                     Del.quantity cm3/: 183.0...187.0
1000H.: (181.0...189.0)
Dispersion cm3/: 5.00
1000H.: (9.00)
Overflow valve
                    : 1 417 413 025
Inlet press., bar : 1.50
                                                     HIGHEST RATED SPEED
Calibrating nozzle-holder
 assembly
                : 1 688 901 019
                                                     Testing:
                                                     1st c-rod trav.mm : 8.80
                                                                  1/min: 750...755
Opening
                                                        Speed
                    : 207...210
                                                     2nd c-rod trav.mm : 4.00
 pressure, bar
                                                       Speed
                                                                  1/min : 776...789
                                                                  1/min : 850
                                                     4th speed
Perforated-plate
                                                       C-rod trav.mm : 0.00...1.00
 diameter mm
                    : 0,8
Test inj. tubing
                   : 1 680 750 067
                                                     Remarks:
Outside diameter
x Wall thickness
                   : 6.00x1.50x1000
x Length mm
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
    per values ____
START OF DELIVERY
Test pressure, bar: 25...27
```

Prestroke mm

: 2.60...2.70 : (2.55...2.75)

Contr.-rod trav.mm: 9.00...12.00

Note inst. in remarks column

Test sheet : FIA 13,8 Q Edition : 09.03.87 Superceeded : 3.84 Calibrating oil : ISO-4113

Combination no. : 0 401 846 787

Injection pump

Pump designation : PE6P12OA72ORS3123 EP type number : 0 411 826 731

Governor

Governor design. : RQV300...900PA501-1 Governer no. : 0 421 813 421

Customer-spec. information Customer : IVECO-FIAT

: 8210.22.105 Engine

1st version kW : 243.0 Speed 1/min: 1800

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C

: 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder

assembly : 1 688 901 019

Opening

: 207...210 pressure, bar

Perforated-plate

diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter x Wall thickness

: 6.00x1.50x1000 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values ____

START OF DELIVERY

Test pressure, bar: 25...27

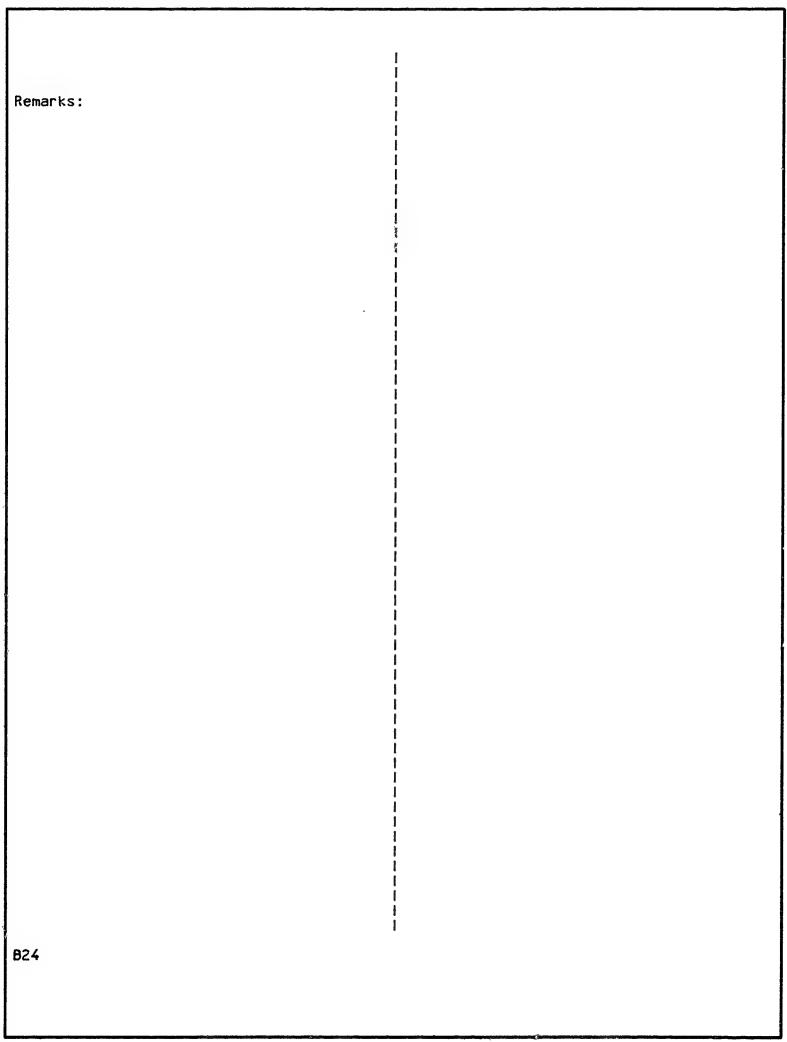
Prestroke mm : 3.50...3.60 Dispersion cm3/ : 5.00 : (3.45...3.65) 1000H.: (9.00) Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1- 5- 3- 6- 2- 4 HIGHEST RATED SPEED 1st version Control-lever position degrees: 61...69 SP ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Testing: 1st c-rod trav.mm : 12.20 Speed 1/min: 940...950 SD mark cyl. no. : 1 2nd c-rod trav.mm : 4.00 Speed 1/min : 1035...1065 4th speed 1/min : 1200 C-rod trav.mm : 0.00...1.00 BASIC SETTING 1st speed 1/mi: 900 Contr.-rod trav.mm: 13.20...13.30 LOWEST RATED SPEED I Control-lever Del.quantity cm3/ : 21.6...21.8 position degrees: 6...14 100H.: (21.3...22.1) Testing: Speed 1/min: 100 C-rod trav.mm min: 7.60 Speed 1/min: 300 Dispersion cm3/:0.5100H.: (0.9) C-rod trav.mm : 6.00...6.20 2nd speed 1/min: 300.0 CONSTANT REGULATION Contr.-rod trav. m: 6.0...6.2

Del.quantity cm3/: 1.5...2.1

100H.: (1.2...2.4)

Dispersion cm3/: 0.8

100H.: (1.2) Speed 1/min: 375...490 compensator (LDA,ADA,ALDA) 1st version Setting (B) Setting of injection pump with 1/min : 500 externally-mounted governor Speed hPa : 900 Pressure Contr.-rod trav.mm: 13.20...13.30 SLEEVE TRAVELS 1st speed 1/min: 325
Sleeve travel mm: 1.20...1.40
2nd speed 1/min: 550
Sleeve travel mm: 3.80...4.50
3rd speed 1/min: 800 Measurement Speed 1/min: 500 1st pressure hPa : -C-rod trav.mm : 10.00...10.10 Sleeve travel mm: 6.60...7.00 2nd pressure hPa : 500 4th speed 1/min: 900 Action Sleeve travel mm: 7.70...7.90 C-rod trav.mm : 12.40...12.50 3rd pressure hPa : 350 : 10.60...11.00 SLEEVE POSITION C-rod trav.mm Control-lever position Degree: -1 1/min: 995 FUEL-DELIVERY CHARACTERISTICS Cont.-rod travelmm: 15.20...17.80 1st version Charge press. hPa : 900 FULL-LOAD DELIV. AT FULL-LOAD STOP 1/min : 500 Speed Del.quantity cm3/: 235.0...241.0 1000H.: (232.0...244.0) 1st version Speed 1/min: 900 Charge press. hPa: 900 Charge press. hPa : -Speed 1/min : 500 Del.quantity cm3/: 216.0...218.0 1000H.: (213.0...221.0) Del.quantity cm3/: 135.0...137.0 1000H.: (132.0...140.0)



Note inst. in remarks column

Test sheet Edition Superceeded : SCA 8,0 H 1 : 12.09.86

Calibrating oil : ISO-4113

Combination no. : 0 401 846 791

Injection pump

Pump designation : PE6P110A720RS3034

EP type number : 0 411 816 711

Governor Governor design. : RQV275...1200PA529-1

Governer no. : 0 421 813 431

Customer-spec. information Customer : SCANIA

Engine : DSI8 01

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. ^DC : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Calibrating nozzle-holder

assembly : 0 681 343 009

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter

x Wall thickness

: 6,00x1.50x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant.

per values _____

START OF DELIVERY

Test pressure, bar: 25...27

: 3.30...3.40 Prestroke mm

: (3.25...3.45)

Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1-5- 3- 6- 2- 4

SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - 0.50 (0.75) SD mark cyl. no. : 1 BASIC SETTING 1st speed 1/mi: 700 Contr.-rod trav.mm: 13.20...13.30 Dei.quantity cm3/: 12.9...13.1 100H.: (12.7...13.3) Dispersion cm3/:0.5100H.: (0.7) 2nd speed 1/min: 275.0 Contr.-rod trav. m: 5.1...5.3 Del.quantity cm3/:? 100H.: (?) cm3/: 0.2 Dispersion 100H.: (0.4) SLEEVE POSITION Control-lever position Degree: -1 1/min: 1200 Cont.-rod travelmm: 15.20...17.80 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version 1/min: 700 Speed Charge press. hPa: 900 Del.quantity cm3/: 129.0...131.0 1000H.: (127.0...133.0) Dispersion cm3/: 5.00 1000H.: (7.00) HIGHEST RATED SPEED 1st version Control-lever position degrees: 60...68 Testing: 1st c-rod trav.mm : 12.20 Speed 1/min: 1240...1250 2nd c-rod trav.mm : 4.00 Speed 1/min : 1340...1370 4th speed 1/min: 1450 C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 6...14

Testing: 1/min : 100 Speed C-rod trav.mm min : 6.60 Speed 1/min: 275 C-rod trav.mm: 5.10...5.30 C-rod trav.mm: 2.00 1/min : 340...400 Speed compensator (LDA,ADA,ALDA) 1st version Setting 1/min : 500 Speed Pressure hPa : 900 Contra-rod trav.mm: 13.20...13.30 Measurement 1/min : 500 Speed 1st pressure hPa : -C-rod trav.mm : 11.30...11.40 2nd pressure hPa : 440 C-rod trav.mm : 12.70...12.80 3rd pressure hPa : 290 C-rod trav.mm : 11.70...11.90 FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 900 1/min : 1200 Del.quantity cm3/: 133.5...138.5 1000H.: (131.0...141.0)

Charge press. hPa: Speed 1/min: 500
Del.quantity cm3/: 79.0...83.0 1000H.: (77.0...85.0)

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BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                       SD ang. spacing<sup>0</sup>C$: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)
Mote inst. in remarks column
Test sheet
                    : SCA 11,0 R8
                                                       SD mark cyl. no. : 1
                    : 09.03.87
Edition
Superceeded
                                                       BASIC SETTING
Calibrating oil : ISO-4113
                                                       1st speed
                                                                       1/mi: 700
Combination ne.
                   : 0 401 846 795
                                                       Contr.-rod trav.mm: 13.60...13.70
Injection pump
Pump designation : PE6P110A720R$3040
                                                       Del.quantity cm3/: 16.8...17.0
EP type number : 0 411 816 713
                                                                      100H.: (16.6...17.2)
Governor
Governor design. : RQV275...1000PA555-2
                                                       Dispersion
Governer no. : 0 421 813 443
                                                                     cm3/:0.6
                                                                      100H.: (0.8)
Customer-spec. information
Customer
                   : SCANIA
                                                       2nd speed 1/min: 275.0
Contr. rod trav. m: 4.4...4.6
Del.quantity cm3/: 1.7...2.1
Engine
                    : DS11 14
TEST BENCH REQUIREMENTS
                                                                      100H.: (1.4...2.3)
                                                                      cm3/:0.2
                                                       Dispersion
Calibrating-oil inlet temp. OC
                                                                      100H.: (0.4)
                    : 38...42
                                                       (B) Setting of injection pump with
                                                           externally-mounted governor
Overflow valve
                    : 1 417 413 025
                                                       SLEEVE TRAVELS
                                                       1st speed 1/min: 275
Inlet press., bar: 1.50
                                                         Sleeve travel mm: 0.90...1.10
                                                       2nd speed 1/min: 430
Calibrating nozzle-holder
              : 0 681 343 009
                                                         Sleeve travel mm: 3.70...4.00
 assembly
                                                       3rd speed 1/min: 520
Sleeve travel mm: 4.80...5.10
4th speed 1/min: 1050
Sleeve travel mm: 8.00...8.20
Opening
 pressure, bar : 172...175
                                                       5th speed 1/min: 1210
Test inj. tubing : 1 680 750 015
                                                         Sleeve travel mm: 9.50...9.80
                                                       SLEEVE POSITION
Outside diameter
x Wall thickness
                                                       Control-lever position
                                                       Degree: -1
Speed 1/min: 1100
Cont.-rod travelmm: 15.20...17.80
x Length mm
               : 6.00%.50x600
(A) Injection pump setting values
    Insp. values in parentheses
    Set constant delivery quant.
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
    per ( )
                                                       1st version
START OF DELIVERY
                                                       Speed
                                                                     1/min: 700
                                                       Charge press. hPa: 900
Test pressure, bar: 25...27
                                                       Del.quantity cm3/: 168.0...170.0
1000H.: (166.0...172.0)
Dispersion cm3/: 6.00
                    : 3.30...3.40
: (3.25...3.45)
Prestroke mm
                                                                    1000H2: (8.00)
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1-5-3-6-2-4
                                                       HIGHEST RATED SPEED
                                                       1st version
```

```
Control-lever
 position degrees: 111...119
Setting point:
           1/min : 1100
Speed
Contr.-rod trav.mm: 16.5
Testing:
1st c-rod trav.mm : 12.60
           1/min : 1040...1050
  Speed
2nd c-rod trav.mm : 4.00
           1/min: 1195...1225
  Speed
            1/min : 1350
4th speed
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 60...68
Setting point w/out aux. spring
Speed
           1/min : 275
Contr.-rod trav.mm: 4.5
Testing:
            1/min : 100
Speed
C-rod trav.mm min: 5.90
            1/min : 275
Speed
C-rod trav.mm
                : 4.40...4.60
C-rod trav.mm
                : 2.00
           1/min : 325. .385
Speed
 compensator (LDA, ADA, ALDA)
1st version
Setting
Speed
            1/min : 500
            hPa : 900
Pressure
Contr.-rod trav.mm: 13.60...13.70
Measurement
            1/min : 500
Speed
  C-rod trav.mm : 12.00...12.10
2nd pressure hPa : 420
 C-rod trav.mm : 13.20...13.30
3rd pressure hPa : 290
  C-rod trav.mm
                  : 12.30...12.50
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa: 900
Speed 1/min: 1000
Del.quantity cm3/: 169.5...174.5
1000H.: (168.0...176.0)
            1/min : 500
Speed
Del.quantity cm3/: 133.0...137.0
            1000H.: (131.0...139.0)
```

Note inst. in remarks column

Test sheet : SCA 11.0 Edition : 09.03.87 Superceeded : 7.85 Calibrating oil : ISO-4113 : SCA 11,0 YZ

Combination no. : 0 401 846 800

Injection pump

Pump designation : PE6P110A720RS3115

EP type number : 0 411 816 735

Governor

Governor design. : RQ200...1100PA719 Governer no. : 0 421 801 263

Customer-spec. information : SAAB-SCANIA Customer

: DN11 01 Engine

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C

: 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Calibrating nozzle-holder

: 0 681 343 009 assembly

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter x Wall thickness

: 6.00X1.50X600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

START OF DELIVERY

Test pressure, bar: 25...27

: 3.30...3.40 Prestroke mm

: (3.25...3.45)

Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1-5- 3- 6- 2-

SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) SD mark cyl. no. : 1 BASIC SETTING 1st speed 1/mi: 600 Contr.-rod trav.mm: 12.40...12.50 Del.quantity cm3/: 11.9...12.1 100H.: (11.7...12.3) cm3/:0.5Dispersion 100H.: (0.7) 2nd speed 1/min: 225.0 Contr.-rod trav. m: 5.4...5.6 Del.quantity cm3/: 2.0...2.4 cm3/:0.2Dispersion 100H.: (0.4) (B) Setting of injection pump with externally-mounted governor SLEEVE TRAVELS 1st speed 1/min: 225 Sleeve travel mm: 1.30...1.40 2nd speed 1/min: 350 Sleeve travel mm: 2.90...3.30 3rd speed 1/min: 450
Sleeve travel mm: 3.90...4.10
4th speed 1/min: 1050
Sleeve travel mm: 3.90...4.10 5th speed 1/min: 1160 Sleeve travel mm: 4.50...4.70 SLEEVE POSITION Control-lever position Degree: 101 1/min: 600 Speed Cont.-rod travelmm: 15.20...17.80 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version 1/min: 600 Speed Del.quantity cm3/: 119.0...121.0 1000H.: (117.0...123.0) Dispersion cm3/: 5.00 1000H.: (7.00) HIGHEST RATED SPEED 1st version Control-lever position degrees: 94...102

C03

Setting point: Speed ` 1/min : 600 Contr.-rod trav.mm: 16.5 Testing: 1st c-rod trav.mm : 11.40 Speed 1/min: 1145...1160 2nd c-rod trav.mm : 4.00 Speed 1/min: 1295...1325 4th speed 1/min: 1450 C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 62...70 Setting point w/out aux. spring 1/min : 225 Contr.-rod trav.mm: 5.5 Testing: Speed 1/min: 100 C-rod trav.mm min : 6.90 1/min : 225 Speed C-rod trav.mm : 5.40...5.60 C-rod trav.mm : 2.00 1/min : 330...370 Speed FUEL-DELIVERY CHARACTERISTICS Speed 1/min: 1100 Del.quantity cm3/: 119.5...124.5 1000H.: (118.0...126.0)

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                     START OF DELIVERY
                                                     Test pressure, bar: 25...27
Note inst. in remarks column
                                                                         : 4.00...4.10
                                                     Prestroke mm
Test sheet
                                                                         : (3.95...4.15)
                   : MB 11,0 E 8
                                                     Contr.-rod trav.mm: 9.00...12.00
                   : 09.03.87
Edition
                                                     Cam seguence : 6-3-5-2-4-1
Superceeded
Calibrating oil : ISO-4113
                   : 0 401 846 801
Combination no.
                                                     SD ang. spacing CS: 0-45-120-165-240-285 Tolerance + - : 0.50 (0.75)
Injection pump
Pump designation : PE6P120A320LS3810-10
EP type number : 0 411 826 734
                                                     SD mark cyl. no. : 6
Governor
Governor design. : RQV350...1150PA720-3
                                                     BASIC SETTING
Governer no.
                   * 0 421 813 624
                                                                    1/mi: 1150
                                                     1st speed
Customer-spec, information
                                                     Contr.-rod trav.mm: 11.00...11.10
Customer
                   : DAIMLER-BENZ
                                                     Del.quantity cm3/: 16.3...16.5
Engine
                   : 0M421A
1st version kW : 184.0
                                                                   100H.: (16.0...16.8)
Speed
              1/min: 2300
                                                     Dispersion
                                                                   cm3/:0.5
TEST BENCH REQUIREMENTS
                                                                   100H.: (0.9)
Calibrating-oil inlet temp. °C
                   : 38...42
                                                                   1/min: 350.0
                                                     2nd speed
                                                     Contr.-rod trav. m: 4.8...5.0
Del.quantity cm3/: 1.4...2.0
100H.: (1.1...2.3)
Overflow valve
                   : 1 417 413 025
                                                                   cm3/: 0.8
100H.: (1.2)
                                                     Dispersion
Inlet press., bar : 1.50
                                                     SLEEVE POSITION
Overflow
 quantity min. 1/h: 100...110
                                                     Control-lever position
                                                                  Degree: -1
1/min: 1250
Calibrating nozzle-holder
                   : 1 688 901 019
                                                     Cont.-rod travelmm: 15.20...17.80
 assembly
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
 pressure, bar
                   : 207...210
                                                     1st version
                                                     Speed 1/min: 1150
Charge press. hPa: 700
Del.quantity cm3/: 163.0...165.0
Perforated-plate
 diameter mm
                   : 0,8
                                                                  1000H.: (160.0...168.0)
                                                                  cm3/ : 5.00
Test inj. tubing : 1 680 750 067
                                                     Dispersion
                                                                  1000H.: (9.00)
Outside diameter
x Wall thickness
                                                     HIGHEST RATED SPEED
                   : 6.00x1.50x1000
                                                     1st version
x Length mm
                                                     Control-lever
                                                      position degrees: 58...66
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                     Testing:
    per values
                                                     1st c-rod trav.mm : 10.00
                                                       Speed 1/min: 1175...1185
COS
```

2nd c-rod trav.mm : 4.00 1/min : 1260...1290 Speed 1/min : 1360 4th speed C-rod trav.mm : 0.00...1.50 LOWEST RATED SPEED I Control-lever position degrees: 7...15 Testing: 1/min : 100 Speed C-rod trav.mm min: 6.70 Speed 1/min: 350 C-rod trav.mm : 4.80...5.00 CONSTANT REGULATION 1/min : 350...500 Speed TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min: 1050 C-rod trav.mm : 11.00...11.10 2nd speed 1/min: 850 C-rod trav.mm : 11.30...11.50 3rd speed 1/min : 950 C-rod trav.mm : 11.10...11.30 compensator (LDA, ADA, ALDA) 1st version Setting 1/min: 500 Speed hPa : 700 Pressure Contr.-rod trav.mm: 11.30...11.50 Measurement 1/min : 500 Speed 1st pressure hPa : -C-rod trav.mm : 10.80...11.00 2nd pressure hPa : 450 C-rod trav.mm : 11.10...11.20 SWITCH-OVER POINT 1/min : 270 (290) Speed FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa: 700 1/min : 600 Speed Del.quantity cm3/: 170.0...176.0 1000H.: (167.0...179.0) Dispersion cm3/: 8.00 Dispersion 1000H.: (12.0) Charge press. hPa: 700 1/min : 1150 Speed Del.quantity cm3/: 128.0...131.0 * 1000H.: (125.0...134.0)

C06

Dispersion cm3/: 8.00 1000H.: (12.0) Charge press. hPa: -Speed 1/min: 500 Del.quantity cm3/: 146.0...148.0

1000H.: (143.0...151.0) Dispersion cm3/: 8.00 1000H.: (12.0)

Note inst. in remarks column

Test sheet : VOL12.1 A Edition : 12.09.86 Superceeded : -

Calibrating oil : ISO-4113

Combination no. : 0 401 846 813

Injection pump

Pump designation : PE6P120A320RS3165 EP type number : 0 411 826 747

Governor

Governor design. : RQV300...1050PA657-2 Governer no. : 0 421 813 419

Customer-spec. information Customer : VOLVO

: TD121K Engine

1st version kW : 228.0 Speed 1/min: 2100

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. ^DC

: 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Calibrating nozzle-holder

: 1 688 901 019 assembly

Opening

pressure, bar : 207...210

Perforated-plate

: 0,8 diameter mm

Test inj. tubing : 1 680 750 067

Outside diameter

x Wall thickness x Length mm : 6.00x1.50x1000

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant.

per values ____

START OF DELIVERY

Test pressure, bar: 25...27

Del.quantity cm3/: 218.0...222.0 1000H:: (216.0...224.0) Dispersion cm3/: 5.00 1000H:: (9.00) : 2.60...2.70 : (2.55...2.75) Prestroke mm Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1-5-3-6-2-4 HIGHEST RATED SPEED 1st version SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Control-lever position degrees: 58...66 SD mark cyl. no. : 1 Testing: 1st c-rod trav.mm : 11.30 Speed 1/min : 1105...1115 BASIC SETTING 2nd c-rod trav.mm: 4.00 Speed 1/min: 1170...1200 4th speed 1/min: 1300 1/mi: 700 1st speed Contr.-rod trav.mm: 12.30...12.40 C-rod trav.mm : 0.00...1.00 Del.quantity cm3/ : 21.8...22.2 LOWEST RATED SPEED I Control-lever 100H.: (21.6...22.4) position degrees: 7...15 Dispersion cm3/: 0.5 Testing: 1/min : 100 Speed C-rod trav.mm min : 5.20 100H.: (0.9) Speed 1/min: 300 2nd speed 1/min: 300.0 Contr.-rod trav. m: 3.7...3.9 Del.quantity cm3/: 2.2...2.6 100H.: (-) Dispersion cm3/: 0.5 100H.: (0.7) C-rod trav.mm : 4.70...4.90 compensator (LDA,ADA,ALDA) 1st version Setting 1/min : 500 (B) Setting of injection pump with Speed Pressure hPa : 1000 externally-mounted governor Contr.-rod trav.mm: 12.30...12.40 SLEEVE TRAVELS 1st speed 1/min: 300
Sleeve travel mm: 1.60...1.80
2nd speed 1/min: 450
Sleeve travel mm: 3.60...4.00
3rd speed 1/min: 700 Measurement Speed 1/min: 500 1st pressure hPa : -C-rod trav.mm : 8.50...8.70 Sleeve travel mm: 6.40...6.60 2nd pressure hPa : 680 C-rod trav.mm : 12.10...12.20 3rd pressure hPa : 150 4th speed 1/min: 950 Sleeve travel mm: 6.40...6.60

5th speed 1/min: 1110

Sleeve travel mm: 7.80...8.00 : 8.90...9.10 C-rod trav.mm FUEL-DELIVERY CHARACTERISTICS SLEEVE POSITION Control-lever position 1st version Degree: -1 1/min: 1130 Charge press. hPa: 1000 1/min : 1000 Speed Speed Del.quantity cm3/: 220.0...225.0 1000H.: (217.5...227.5) Cont.-rod travelmm: 15.20...17.80 Charge press. hPa : -Speed 1/min : 700 FULL-LOAD DELIV. AT FULL-LOAD STOP Del.quantity cm3/: 131.0...135.0 1st version Speed 1000H.: (129.0...137.0) 1/min: 700 Charge press. hPa : 1000

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Note inst, in remarks column

Test sheet : VOL 12,1 B Edition : 28,10.86

Superceeded

Calibrating oil : ISO-4113

Combination %a. : 0 401 846 814

Injection pump

Pump designation ; PE6P12OA32ORS3166

EP type number : 0 411 826 748

Governor

Governor design. : RQV300...1050PA371-1

Governer no. : 0 421 813 412

Customer-spec. information Customer : VOLVO

Engine : TD 1216

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. C: 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Calibrating nozzle-holder

assembly : 1 688 901 019

Opening

pressure, bar : 207...210

Perforated-plate

diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter

x Wall thickness

x Length mm : 6.00x1.50x1000

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values ____

START OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.60...2.70

: (2.55...2.75)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1-5-3-6-2-4 HIGHEST RATED SPEED 1st version Control-lever SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) position degrees: 39...47 Testing: SD mark cyl. no. : 1 1st c-rod trav.mm: 9.50 1/min: 1105...1115 Speed BASIC SETTING 2nd c-rod trav.mm : 4.00 1/min : 1185...1215 1/min : 1325 Speed 1/mi: 700 1st speed 4th speed C-rod tray.mm : 0.00...1.00 Contr.-rod trav.mm: 10.50...10.60 LOWEST RATED SPEED I Del.quantity cm3/: 17.4...17.8 Control-lever position degrees: 10...18 100H.: (17.2...18.0) Testing: Dispersion cm3/:0.51/min : 100 Speed C-rod trav.mm min : 6.80 Speed 1/min: 300 C-rod trav.mm: 5.30...5.50 100H.: (0,9) : 2.00 1/min: 300.0 C-rod trav.mm 2nd speed Contr.-rod trav. m: 5.3...5.5 Del.quantity cm3/: 1.7...2.1 100H.: (-) 1/min : 380...440 Speed compensator (LDA,ADA,ALDA) cm3/: 0.5 100H.: (0.7) Dispersion 1st version (B) Setting of injection pump with Setting externally-mounted governor 1/min : 500 Speed hPa : 900 SLEEVE TRAVELS Contr.-rod trav.mm: 10.50...10.60 1st speed 1/min: 300
Sleeve travel mm: 1.50...1.60
2nd speed 1/min: 410
Sleeve travel mm: 2.30...2.70
3rd speed 1/min: 550 Measurement 1/min: 500 Speed 1st pressure hPa : -Sleeve travel mm: 3.30...3.80 C-rod trav.mm : 9.10...9.20 4th speed 1/min: 1090 2nd pressure hPa : 390 Sleeve travel mm: 7.80...8.00 C-rod trav.mm : 10.30...10.40 5th speed 1/min: 1160 Sleeve travel mm: 8.50...8.80 3rd pressure hPa : 160 C-rod trav.mm : 9.40...9.60 SLEEVE POSITION FUEL-DELIVERY CHARACTERISTICS Control-lever position Charge press. hPa : -1/min : 700 Degree: -1 17min: 1140 Del.quantity cm3/: 148.0...152.0 Speed 1000H.: (146.0...154.0) Cont.-rod travelmm: 15.20...17.80 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version 1/min: 700 Remarks: Spead Charge press. hPa: 900
Del.quantity cm3/: 174.0...178.0
1000H.: (172.0...180.0)
Dispersion cm3/: 5.00
1000H.: (9.00)

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                     Prestroke mm : 2.60...2.70
                                                                         : (2.55...2.75)
                                                     Contr.-rod trav.mm: 9.00...12.00
Note inst. in remarks column
                                                     Cam sequence : 1- 5- 3- 6- 2- 4
Test sheet
                   : VOL 12,0 K9
                   : 14.11.86
Edition
Superceeded
                                                     SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Calibrating oil : ISO-4113
Combination no. : 0 401 846 817
                                                     SD mark cyl. no. : 1
Injection pump
Pump designation : PE6P12OA32ORS3118-5
                                                     BASIC SETTING
EP type number : 0 411 826 753
Governor
                                                     1st speed
                                                                   1/mi: 700
Governor design. : R@V250...850PA657-9
                                                     Contr.-rod trav.mm: 12.30...12.40
Governer no. : 0 421 813 566
                                                     Del.quantity cm3/: 21.2...21.5
Customer-spec. information
Customer
                   : VOLVO
                                                                   100H.: (20.9...21.8)
                   : TD121FH
Engine
                                                     Dispersion
                                                                   cm3/:0.5
1st version kW : 232.0
           1/min: 1700
                                                                   100H.: (0.9)
Speed
TEST BENCH REQUIREMENTS
                                                     2nd speed
                                                                   1/min: 250.0
                                                     Contr.-rod trav. m: 3.3...3.5
Del.quantity cm3/: 1.8...2.3
100H.: (-)
Dispersion cm3/: 0.5
100H.: (0.7)
Calibrating-oil inlet temp. °C
                    : 38...42
Overflow valve
                    : 1 417 413 025
                                                     (B) Setting of injection pump with
                                                         externally-mounted governor
Inlet press., bar: 1.50
Calibrating nozzle-holder
                                                     SLEEVE TRAVELS
              : 1 688 901 019
                                                     1st speed 1/min: 250
 assembly
                                                       Sleeve travel mm: 1.10...1.20
                                                     2nd speed 1/min: 450
Opening
                                                     Sleeve travel mm: 3.60...3.90
3rd speed 1/min: 700
 pressure, bar : 207...210
                                                     Sleeve travel mm: 6.40...6.60
4th speed 1/min: 900
Sleeve travel mm: 7.50...7.70
Perforated-plate
 diameter mm
                    : 0,8
                                                     5th speed 1/min: 980
Test inj. tubing : 1 680 750 067
                                                       Sleeve travel mm: 8.80...9.20
                                                     SLEEVE POSITION
Outside diameter
x Wall thickness
                                                     Control-lever position
                   : 6.00x1.50x1000
                                                                  Degree: -1
x Length mm
                                                                   17min: 900
                                                     Speed
                                                     Cont.-rod travelmm: 15.20...17.80
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values ____
                                                     1st version
                                                                   1/min: 700
START OF DELIVERY
                                                     Speed
                                                     Charge press. hPa : 900
Test pressure, bar: 25...27
C13
```

```
Del.quantity cm3/: 212_0...215.0
            1000H.: (209.0...218.0)
            cm3/ : 5.00
Dispersion
            1000H.: (9.00)
HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 56...64
Testing:
1st c-rod trav.mm : 11.30
           1/min: 890...900
  Speed
2nd c-rod trav.mm : 4.00
            1/min: 955...985
1/min: 1100
  Speed
4th speed
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 3...11
Testing:
            1/min : 100
Speed
C-rod trav.mm min: 4.80
           1/min : 250
Speed
C-rod trav.mm
                  : 3.30...3.50
CONSTANT REGULATION
            1/min : 250...350
Speed
 compensator (LDA,ADA,ALDA)
1st version
Setting
            1/min : 500
hPa : 900
Speed
Pressure
Contr.-rod trav.mm: 12.30... 12.40
Measurement
Speed
            1/min : 500
1st pressure hPa : -
                  : 9.60...9.70
 C-rod trav.mm
2nd pressure hPa : 390
 C-rod trav.mm : 12.10...12.20
3rd pressure hPa : 150
                  : 9.90...10.10
  C-rod trav.mm
FUEL-DELIVERY CHARACTERISTICS
Charge press. hPa : -
           1/min : 700
Speed
Del.quantity cm3/: 160.0...164.0
            1000H.: (157.0...167.0)
Remarks:
```

Mare Commen

C14

```
Cam sequence : 1-5-3-6-2-4
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
                                                         SD ang. spacing ^{\circ} CS: 0-60-120-180-240-300 Tolerance + - ^{\circ} : 0.50 (0.75)
Test sheet
                     : VOL 10,0 04
                     : 12.09.86
Edition
Superceeded
Calibrating oil : ISO-4113
                                                         SD mark cyl. no. : 1
Combination no.
                    : 0 401 846 821
                                                         BASIC SETTING
                                                                         1/mi: 700
Injection pump
                                                         1st speed
Pump designation : PE6P110A32ORS3080-2
EP type number
                    : 0 411 816 750
                                                         Contr.-rod trav.mm: 13.20...13.30
Governor
Governor design. : RQV250...1025PA589-1
Governer no. : 0 421 813 564
                                                         Del.quantity cm3/: 18.0...18.2
                                                                        100H.: (17.7...18.5)
Customer-spec. information
                                                                        cm3/:0.4
Customer
                    : VOLVO
                                                         Dispersion
                     : TD101FC
                                                                        100H.: (0.7)
Engine
1st version kW : 221.0
                                                         2nd speed
                                                                        1/min: 250.0
                                                         Contri-rod trav. m: 4.3...4.5
Speed
               1/min: 2050
                                                         Del.quantity cm3/: 1.5...1.9
                                                                        100H.: (1.2...2.1) cm3/: 0.3
TEST BENCH REQUIREMENTS
                                                         Dispersion
Calibrating-oil inlet temp. °C
                                                                        100H.: (0.6)
                     : 38...42
                                                         (B) Setting of injection pump with
Overflow valve
                                                             externally-mounted governor
                     : 1 417 413 025
                                                         SLEEVE TRAVELS
Inlet press., bar: 1.50
                                                         1st speed 1/min: 250
                                                           Sleeve travel mm: 1.20...1.30
                                                         2nd speed 1/min: 350
Calibrating nozzle-holder
                                                        Sleeve travel mm: 2.20...2.80

3rd speed 1/min: 430
Sleeve travel mm: 3.50...3.90
4th speed 1/min: 1080
Sleeve travel mm: 8.40...8.50
                  : 0 681 343 009
 assembly
Opening
pressure, bar : 172...175
                                                         5th speed 1/min: 1150
Test inj. tubing : 1 680 750 015
                                                           Sleeve travel mm: 9.50...9.80
                                                         SLEEVE POSITION
Outside diameter
                                                         Control-lever position
x Wall thickness
                                                                      Degree: -1
1/min: 1080
                 : 6.00x1.50x600
x Length mm
                                                         Speed
                                                         Cont.-rod travelmm: 15.20...17.80
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
    per values ____
                                                         1st version
START OF DELIVERY
                                                                        1/min; 700
                                                         Speed
                                                        Charge press. hPa: 1000
Del.quantity cm3/: 180.0...182.0
1000H.: (177.0...185.0)
Dispersion cm3/: 4.00
Test pressure, bar: 25...27
Prestroke mm
                     : 3.00...3.10
                     : (2.95...3.15)
                                                                       1000H.: (7.50)
Contr.-rod trav.mm: 9.00...12.00
C15
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HIGHEST RATED SPEED
1st version
Control-lever
 position degrees: 61...69
Testing:
1st c-rod trav.mm : 12.20
            1/min: 1085...1095
  Speed
2nd c-rod trav.mm : 4.00
  Speed 1/min: 1140...1170 th speed 1/min: 1300 C-rod trav.mm: 0.00...1.00
4th speed
LOWEST RATED SPEED I
Control-lever
 position degrees: 5...13
Testing:
Speed 1/min: 100
C-rod trav.mm min: 5.80
Speed 1/min: 250
C-rod trav.mm
                  : 4.30...4.50
CONSTANT REGULATION
             1/min : 270...380
Speed
 compensator (LDA_ADA_ALDA)
1st version
Setting
             1/min : 500
Speed
Pressure
             hPa : 1000
Contr.-rod trav.mm: 13.20...13.30
Measurement
             1/min : 500
Speed
1st pressure hPa : -
                    : 10.20...10.30
 C-rod trav.mm
2nd pressure hPa
                   : 700
                    : 13.00...13.10
 C-rod trav.mm
                    : 250
3rd pressure hPa
                     : 10.50...10.70
  C-rod trav.mm
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 1000
             1/min : 1000
Speed
Del.quantity cm3/: 170.0...174.0
1000H.: (167.0...177.0)
Charge press. hPa : -
             1/min: 700
Speed
Del.quantity cm3/: 124.0...127.0
1000H.: (121.5...129.5)
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BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : VOL 10.0 05 : 12.09.86 Superceeded Calibrating oil : ISO-4113 : 0 401 846 822 Combination no. Injection pump Pump designation : PE6P110A320R\$3080-2 : 0 411 816 750 EP type number Governor Governor design. : RQV250...1100PA589-2 Governer no. : 0 421 813 565 Customer-spec. information Customer : VÕLVO Engine : TD101FD 1st version kW : 222 Speed 1/min: 2200 TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C : 38...42 Overfiow valve : 1 417 413 025 Inlet press., bar: 1.50 Calibrating nozzle-holder : 0 681 343 009 assembly Opening pressure, bar : 172...175 Test in ;. tubing : 1 680 750 015 Outside diameter x Wall thickness

: 6.00x1.50x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses S⊕t constant delivery quant. per values ____

START OF DELIVERY Test pressure, bar: 25...27

: 3.00...3.10 Prestroke mm : (2.95...3.15)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1-5-3-6-2-4 HIGHEST RATED SPEED 1st version Control-lever SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) position degrees: 59...67 Testing: 1st c-rod trav.mm : 12.20 SD mark cyl. no. : 1 Speed 1/min: 1160...1170 2nd c-rod trav.mm: 4.00 Speed 1/min: 1220...1250 4th speed 1/min: 1350 C-rod trav.mm: 0.00...1.00 BASIC SETTING 1st speed 1/mi: 700 Contr.-rod trav.mm: 13.20...13.30 LOWEST RATED SPEED I Del.quantity cm3/ : 18.0...18.2 Control-lever position degrees: 5...13 100H.: (17.7...18.5) Testing: Speed 1/min: 100 C-rod trav.mm min: 5.80 Speed 1/min: 250 Dispersion cm3/:0.4100H.: (0.7) C-rod tray.mm : 4.30...4.50 1/min: 250.0 2nd speed Contr.-rod trav. m: 4.3...4.5 CONSTANT REGULATION Del.quantity cm3/: 1.5...1.9 100H.: (-) 1/min : 270...380 Speed cm3/: 0.3 100H.: (0.6) Dispersion compensator (LDA,ADA,ALDA) (B) Setting of injection pump with 1st version externally-mounted governor Setting 1/min : 500 Speed hPa : 1000 SLEEVE TRAVELS Pressure 1st speed 1/min: 250 Contr.-rod trav.mm: 13.20...13.30 Sleeve travel mm: 1.20...1.30 2nd speed 1/min: 350 Sleeve travel mm: 2.20...2.80 Measurement 1/min : 500 Speed 3rd speed 1/min: 430 Sleeve travel mm: 3.50...3.90 1st pressure hPa : -4th speed 1/min: 1160 C-rod trav.mm : 10.20...10.30 Sleeve travel mm: 8.10...8.20 2nd pressure hPa : 700 5th speed 1/min: 1230 C-rod trav.mm : 13.00...13.10 3rd pressure hPa : 250 Sleeve travel mm: 9.40...9.70 C-rod trav.mm : 10.50...10.70 SLEEVE POSITION Control-lever position FUEL-DELIVERY CHARACTERISTICS Degree: -1 1/min: 1180 Speed 1st version Charge press. hPa : 1000 Cont.-rod travelmm: 15.20...17.80 1/min : 1000 Speed Det.quantity cm3/: 170.0...174.0 1000H.: (167.0...177.0) FULL-LOAD DELIV. AT FULL-LOAD STOP Charge press. hPa: -Speed 1/min: 700 Del.quantity cm3/: 124.0...127.0 1000H.: (121.5...129.5) 1st version 1/min: 700 Speed Charge press. hPa: 1000 Del.quantity cm3/: 180.0...182.0 1000H.: (177.0...185.0) Dispersion cm3/ : 4.00 1000H.: (7.50)

C18

| Remarks: | |
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| C19 | |

Note inst. in remarks column

Test sheet : VOL 12,1 A1 : 12.09.86

Superceeded Calibrating oil : ISO-4113

: 0 401 846 828 Combination no.

Injection pump

Pump designation : PE6P120A320RS3165 EP type number : 0 411 826 747

Governor

: RQV300...1025PA657-Governor design.

12

: 0 421 813 571 Governer no.

Customer-spec. information Customer : VOLVO

: TID 121G Engine

1st version kW : 243.0 1/min: 2050 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. "C

: 38 . . . 42

Overflow valve

: 1 417 413 025

Inlet press., bar : 1.50

Calibrating nozzle-holder assembly : 1 688 901 019

Opening

: 207...210 pressure, bar

Perforated-plate

diameter mm : 0,8

Test inj. tubing : 1 680 750 067

Outside diameter

x Wall thickness

x Length mm : 6.00x1.50x1000

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values ____

START OF DELIVERY

Test pressure, bar: 25...27

Del.quantity cm3/: 197.0...200.0 1000H.: (194.0...203.0) Dispersion cm3/: 5.00 Prestroke mm : 2.60...2.70 : (2.55...2.75)
Contr.-rod trav.mm: 9.00...12.00 1000H.: (9.00) Cam sequence : 1-5- 3- 6- 2- 4 HIGHEST RATED SPEED 1st version Control-lever SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) position degrees: 53...61 Testing: 1st c-rod trav.mm : 10.60 Speed 1/min : 1085...1095 SD mark cyl. no. : 1 BASIC SETTING 2nd c-rod trav.mm: 4.00 Speed 1/min: 1160...1190 4th speed 1/min: 1300 1/mi: 700 1st speed C-rod trav.mm : 0.00...1.00 Contr.-rod trav.mm: 11.60...11.70 LOWEST RATED SPEED I Del.quantity cm3/ : 19.7...20.0 Control-lever position degrees: 6...14 100H.: (19.4...20.3) Testing: cm3/:0.5Dispersion 1/min : 100 Speed C-rod trav.mm min: 5.20 Speed 1/min: 300 100H.: (0.9) C-rod trav.mm : 3.70...3.90 2nd speed 1/min: 300.0 Contr.-rod trav. m: 3.7...3.9 Del.quantity cm3/: 2.2...2.6 100H.: (-) Dispersion cm3/: 0.5 100H.: (0.7) CONSTANT REGULATION 1/min: 300...400 Speed compensator (LDA_ADA_ALDA) (B) Setting of injection pump with 1st version externally-mounted governor Setting 1/min : 500 hPa : 1000 Speed Pressure SLEEVE TRAVELS 1st speed 1/min: 300
Sleeve travel mm: 1.70...1.80
2nd speed 1/min: 370
Sleeve travel mm: 2.60...2.90
3rd speed 1/min: 430 Contr.-rod trav.mm: 11.60...11.70 Measurement 1/min : 500 Speed Sleeve travel mm: 3.60...3.80 1st pressure hPa : -4th speed 1/min: 1080 C-rod trav.mm : 10.30...10.40 2nd pressure hPa : 300 Steeve travel mm: 6.80...7.00 5th speed 1/mil: 1160 Steeve travel mm: 8.10...8.30 C-rod trav.mm : 11.40...11.50 3rd pressure hPa : 150 C-rod trav.mm : 10.60...10.80 SLEEVE POSITION FUEL-DELIVERY CHARACTERISTICS Control-lever position vegree: -1 Charge press. hPa : -Speed 1/min: 700 Del.quantity cm3/: 166.0...169.0 1000H.: (163.0...172.0) 17min: 1070 Speed Cont.-rod travelmm: 15.20...17.80 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version 1/min: 700 Speed Charge press. hPa : 1000 Remarks:

C21

Note inst. in remarks column

Test sheet : RVI 9,8 E Edition : 12.09.86 Superceeded : 1.83 Calibrating oil : ISO-4113 : RVI 9,8 B

Combination no. : 0 401 856 149

Injection pump

Pump designation : PE6P12OA321RS438 : 0 411 826 119 EP type number

Governor

Governor design. : RQV275...1200PA538 Governer no. : 0 421 813 267

Customer-spec. information Customer

: MID 062045 Engine

1st version kW : 151.6 1/min: 2400 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Calibrating nozzle-holder

: 0 681 443 022 assembly

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 060

Outside diameter x Wall thickness

: 8.00x2.00x1000 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant.

per values ____

START OF DELIVERY Test pressure, bar: 25...27

: 3.50...3.60 Prestroke mm

: (3.45...3.65) Contr.-rod trav.mm: 9.00...12.00

: 1-5-3-6-2-4 Cam sequence SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) SD mark cyl. no. : 1 BASIC SETTING 1st speed 1/mi: 1290 Contr.-rod trav.mm: 10.60...10.70 Del.quantity cm3/: 14.7...15.1 100H.: (14.4...15.4) Dispersion cm3/:0.5100H.: (0.9) 1/min: 275.0 2nd speed Contr.-rod trav. m: 5.3...5.5 Del.quantity cm3/: 0.7...1.3 100H.: (0.4...1.6) cm3/: 0.8 100H.: (1.2) Dispersion (B) Setting of injection pump with externally-mounted governor SLEEVE TRAVELS 1st speed 1/min: 275 Sleeve travel mm: 1.20...1.40 1/min: 850 2nd speed Sleeve travel mm: 5.10...5.50 3rd speed 1/min: 1200 Sleeve travel mm: 8.00...8.20 SLEEVE POSITION Control-lever position Degree: -1 17min: 1200 Speed Cont.-rod travelmm: 15.20...17.80 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version 1/min: 1200 Speed Del.quantity cm3/: 147.0...151.0 1000H.: (144.0...154.0) cm3/ : 5.00 Dispersion 1000H.: (9,00) HIGHEST RATED SPEED 1st version Control-lever position degrees: 60...68

Testing: 1st c-rod trav.mm : 9.60 1/min : 1240...1250 Speed 2nd c-rod trav.mm: 4.00 1/min: 1310...1340 Speed 4th speed 1/min: 1450 C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 6...14 Testing: Speed 1/min : 100 C-rod trav.mm min: 6.90 Speed 1/min: 275 C-rod trav.mm: 5.30...5.50

CONSTANT REGULATION

Speed 1/min: 280...390

SWITCH-OVER POINT Speed 1/min: 195 (215)

: 3.50...3.60 : (3.45...3.65) BOSCH INJ. PUMP TEST SPECIFICACIONS Prestroke mm Contr.-rod trav.mm: 9.00...12.00 Note inst. in remarks column Cam sequence : 1-5- 3- 6- 2- 4 Test sheet : RVI 9.8 E Edition : 12.09.86 Superceeded : 7.83 : RVI 9,8 B 1 SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Calibrating oil : ISO-4113 Combination no. : 0 401 856 153 SD mark cyl. no. : 1 Injection pump Pump designation : PE6P12OA321RS438 BASIC SETTING EP type number : 0 411 826 119 Governor 1st speed 1/mi: 1200 Governor design. : RQV275...1200PA648 Governer no. : 0 421 813 345 Contr.-rod trav.mm: 11.20...11.30 Customer-spec. information Del₃ quantity cm3/: 13.4...13.7 Customer : RVI 100H.: (13.1...14.0) Engine : MID 062045 Dispersion cm3/:0.51st version kW : 152.0 Speed 1/min: 2400 100H.: (0.9) TEST BENCH REQUIREMENTS 2nd speed 1/min: 275.0 Contr.-rod trav. m: 5.9...6.1
Del.quantity cm3/: 0.7...1.3
100H.: (0.4...1.6)
Dispersion cm3/: 0.8
100H.: (1.2.3) Calibrating-oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 025 (B) Setting of injection pump with Inlet press., bar: 1.50 externally-mounted governor Calibrating nozzle-holder SLEEVE TRAVELS 1st speed 1/min: 275 Sleeve travel mm: 1.20...1.40 : 1 688 901 019 assembly 2nd speed 1/min: 450 Sleeve travel mm: 3.30...4.00 Opening pressure, bar : 207...210 3rd speed 1/min: 850 Perforated-plate Sleeve travel mm: 5.80...6.20 : 0,8 4th speed 1/min: 1200 diameter mm Sleeve travel mm: 8.20...8.40 Test inj. tubing : 1 680 750 067 SLEEVE POSITION Control-lever position Degree: -1 1/min: 1230 Outside diameter x Wall thickness : 6.00x1.50x1000 Cont.-rod travelmm: 15.20...17.80 x Length mm FULL-LOAD DELIV. AT FULL-LOAD STOP (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. 1st version per values ____ 1/min: 1200 Speed Del.quantity cm3/: 134.0...137.0 1000H.: (131.0...140.0) START OF DELIVERY Dispersion cm3/: 5.00 1000H.: (9.00) Test pressure, bar: 25...27 **C26**

HIGHEST RATED SPEED

1st version

Control-lever

position degrees: 61...69

Testing:

1st c-rod trav.mm : 10.20 Speed 1/min : 1240...1250 2nd c-rod trav.mm : 4.00 Speed 1/min : 1335...1365 4th speed 1/min : 1500 C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 7...15

Testing:

Speed 1/min: 100 C-rod trav.mm min: 7.50

Speed 1/min: 275 C-rod trav.mm : 5.90...6.10

CONSTANT REGULATION

1/min : 270...365 Speed

SWITCH-OVER POINT

1/min : 225 (245) Speed

: 3.50...3.60 BOSCH INJ. PUMP TEST SPECIFICATIONS Prestroke mm : (3.45...3.65) Contr.-rod rav.mm: 9.00...12.09 Note inst. in remarks column Cam sequence : 1-5= 3- 6- 2-Test sheet : RVI 8,8 C 1 : 12.09.86 : 7.84 Edition Superceeded SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) : ISO-4113 Calibrating oil Combination no. : 0 401 856 154 SD mark cyl. no. : 1 Injection pump Pump designation : PE6P120A321RS359-1 BASIC SETTING EP type number : 0 411 826 129 1st speed 1/mi: 1200 Governor Governor design. : RQV275...1200PA648 Governer no. : 0 421 813 345 Contr.-rod trav.mm: 10.70...10.80 Customer-spec. information Del.quantity cm3/: 12.7...12.9 Customer : RVI 100H.: (12.4...13.2) : MID 062030 Engine cm3/:0.5Dispersion 1st version kW : 141.0 Speed 1/min: 2400 100K.: (0.9) 2nd speed 1/min: 275.9 Contr.-rod trav. m: 5.60...5.80 Del.quantity cm3/: 1.1...1.7 100H.: (0.8...2.0) Dispersion cm3/: 0.8 TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. OC : 38...42 100H.: (1,2) Overflow valve : 1 417 413 025 (B) Setting of injection pump with externally-mounted governor Inlet press., bar: 1.50 SLEEVE TRAVELS Calibrating nozzle-holder 1st speed 1/min: 275
Sleeve travel mm: 1.30...1.40
2nd speed 1/min: 450
Sleeve travel mm: 3.30...3.90 : 1 688 901 019 assembly Opening : 207...210 pressure, bar 3rd speed 1/min: 800 Sleeve travel mm: 5.70...5.90 Perforated-plate 4th speed 1/min: 1200 diameter mm : 0,8 Sleeve travel mm: 8.20...8,40 SLEEVE POSITION Test inj. tubing : 1 689 750 067 Control-lever position Degree: -1 1/min: 1230 Outside diameter x Wall thickness : 6.00x1.50x1000 Cont.-rod tra almm: 15.20...17.80 x Length mm FULL-LOAD DELIV. AT FULL-LOAD STOP (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. 1st version Speed 1/min: 1200
Del.quantity cm3/: 127.0...129.0
1000H.: (124.0...132.0)
Dispersion cm3/: 5.00 per values ____ START OF DELIVERY Test pressure, bar: 25...27 1000H.: (9.00) **C28**

HIGHEST RATED SPEED 1st version Control-lever

position degrees: 61...69

Testing:

1st c-rod trav.mm : 9.70

Speed 1/min: 1245...1255 2nd c-rod trav.mm: 4.00

Speed 1/min: 1335...1365

4th speed 1/min: 1450 C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 6...14

Testing:

Speed 1/min : 200 C-rod trav.mm min : 8.20 Speed 1/min : 275 C-rod trav.mm : 5.60...5.80

CONSTANT REGULATION

1/min : 275...365 Speed

SWITCH-OVER POINT

1/min : 195 (215) Speed

BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Note inst. in remarks column : PEN 7,1 A 5 Test sheet SD mark cyl. no. : 1 : 12.09.86 Edition Superceeded BASIC SETTING Calibrating oil : ISO-4113 1st speed 1/mi: 700 Combination no. : 0 401 876 319 Contr.-rod trav.mm: 12.60...12.70 Injection pump Pump designation : PE6P110A320RS492-1 Del.quantity cm3/: 13.4...13.6 EP type number : 0 411 816 164 100H.: (13.1...13.9) Governor Governor design. : RSV200...1200P1A305 Governor no. : 0 421 833 197 Dispersion cm3/:0.4190H.: (0.7) Customer-spec. information Customer : VOLVO-PENTA 2nd speed 1/min: 200.0 Contr.-rod trav. m: 5.4...5.6 Del.quantity cm3/: 1.6...2.2 : TD71AW Engine 100H.: (-) TEST BENCH REQUIREMENTS cm3/:0.3Dispersion Calibrating-oil inlet temp. °C 100H.: (0.6) : 38...42 SLEEVE POSITION Overflow valve Control-lever position : 1 417 413 025 Degree: -3 1/min: 800 Cont.-rod travelmm: 0.30...0.70 Inlet press., bar : 1.50 Calibrating nozzle-holder Governor-spring reload Notch setting x : 4.25 : 0 681 343 009 assembly FULL-LOAD DELIV. AT FULL-LOAD STOP Opening pressure, bar : 172...175 1st version 1/min: 700 Speed Del.quantity cm3/: 134.0...136.0 1000H.: (131.0...139.0) Test inj. tubing : 1 680 750 015 Dispersion cm3/: 4.00 1000H.: (7.50) Outside diameter x Wall thickness : 6.00x1.50x600 x Length mm HIGHEST RATED SPEED (A) Injection pump setting values 1st version Insp. values in parentheses Control-Lever Set constant delivery quant. position degrees: 51...59 per values ____ Testing: START OF DELIVERY 1st c-rod trav.mm : 11.60 Speed 1/min: 1140...1150 2nd c-rod trav.mm: 4.00 Test pressure, bar: 25...27 Speed 1/min: 1170...1200 4th speed 1/min: 1340 : 3.00...3.10 Prestroke mm : (2.95...3.15) C-rod trav.mm : 0.30...1.40 Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1-5-3-6-2-4 LOWEST RATED SPEED I Control-lever

position degrees: 13...21
Setting point w/out aux. spring
Speed 1/min: 200
Contr.-rod trav.mm: 5.0
Speed 1/min: 200
C-rod trav.mm : 5.40...5.60
C-rod trav.mm : 2.00
Speed 1/min: 280...340

BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Note inst. in remarks column Test sheet : VOL 7,1 C : 12.09.86 Edition SD mark cyl. no. : 1 Superceeded Calibrating oil : ISO-4113 BASIC SETTING Combination no. : 0 401 876 321 1/mi: 700 1st speed Contr.-rod trav.mm: 11.80...11.90 Injection pump Pump designation : PE6P110A320RS497 EP type number : 0 411 816 165 Del.quantity cm3/: 11.6...11.8 Governor : RSV200...1200P1A374-Governor design. 100H.: (11.3...12.1) Governer no. : 0 421 833 204 Dispersion cm3/:0.4100H.: (0.7) Customer-spec. information Customer : VOLVO 2nd speed 1/min: 200.0 Contrared trav. m: 5.4...5.6 Del.quantity cm3/: 1.6...2.2 : TD71A Engine 100H.: (-) TEST BENCH REQUIREMENTS cm3/:0.3Dispersion Calibrating-oil inlet temp. OC 100H.: (0.6) : 38...42 SLEEVE POSITION Overflow valve Control-lever position Degree: -3 1/min: 800 : 1 417 413 025 Speed Cont.-rod travelmm: 0.30...0.70 Inlet press., bar : 1.50 Calibrating nozzle-holder Governor-spring reload : 0 681 343 009 Notch setting x : 4.25 assembly FULL-LOAD DELIV. AT FULL-LOAD STOP Opening pressure, bar : 172...175 1st version 1/min: 700 Speed Charge press, hPa : 900 Test inj. tubing : 1 680 750 015 Del.quantity cm3/: 116.0...118.0 1000H.: (113.0...121.0) Outside diameter Dispersion cm3/ : 4.00 x Wall thickness 1000H.: (7.50) x Length mm : 6.00x1.50x600 (A) Injection pump setting values HIGHEST RATED SPEED Insp. values in parentheses Set constant delivery quant. 1st version Control-Lever per values ____ position degrees: 51...59 START OF DELIVERY Testing: 1st c-rod trav.mm: 10.80 Test pressure, bar: 25...27 Speed 1/min: 1210...1220 2nd c-rod trav.mm: 4.00 : 3.00...3.10 Prestroke mm Speed 1/min: 1240...1270 : (2.95...3.15) Contr.-rod trav.mm: 9.00...12.00 1/min : 1410 4th speed Cam sequence : 1- 5- 3- 6- 2- 4 C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I Control-lever position degrees: 13.2.21 Setting point w/out aux. spring Speed 1/min : 200 Contr.~rod trav.mm: 5.0 Speed 1/min: 200 av.mm : 5.40...5.60 av.mm : 2.00 1/min : 280...340 C-rod trav.mm C-rod trav.mm Speed compensator (LDA, ADA, ALDA) 1st version Setting 1/min : 500 Speed hPa : 900 Pressure Contr.-rod trav.mm: 11.80...11.90 Measurement Speed 1/min : 500 1st pressure hPa : -C-rod trav.mm : 9.50...9.60 2nd pressure hPa : 675 C-rod trav.mm : 11.60...11.70 3rd pressure hPa : 150 C-rod trav.mm : 9.70...9.90 FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : -1/min : 700 Speed Del.quantity cm3/: 82.0...85.0 1000H.: (79.0...88.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing 0 CS: 0-60-120-180-240-300 Tolerance + - 0 : 0.50 (0.75) Note inst. in remarks column : VOL 7.1 C 1 : 09.03.87 Test sheet Edition SD mark cyl. no. : 1 Superceeded Calibrating oil : ISO-4113 BASIC SETTING : 0 401 876 322 1/mi: 700 Combination no. 1st speed Contr.-rod trav.mm; 11.70...11.80 Injection pump Pump designation : PE6P110A320RS497 EP type number Del.quantity cm3/: 11.6...11.8 : 0 411 816 165 Governor 100H.: (11.3...12.1) : RSV200...1200P1A374-Governor design. : 0 421 833 205 cm3/:0.4Governer no. Dispersion 100H.: (0.7) Customer-spec. information Customer : VOLVO 2nd speed 1/min: 200.0 Contr.-rod trav. m: 5.2...5.4 Del.quantity cm3/: 1.6...2.2 100H.: (-) Engine : TJD71A TEST BENCH REQUIREMENTS cm3/: 0.3 100H.: (0.6) Dispersion Calibrating-oil inlet temp. °C : 38...42 SLEEVE POSITION Control-lever position Overflow valve : 1 417 413 025 Degree: -3 1/min: 800 Speed Inlet press., bar: 1.50 Cont.-rod travelmm: 0.30...0.70 Calibrating nozzle-holder Governor-spring reload : 0 681 343 009 assembly Notch setting x :? Opening FULL-LOAD DELIV. AT FULL-LOAD STOP pressure, bar : 172...175 1st version Speed 1/min: 700 Charge press. hPa : 900 Test inj. tubing : 1 680 750 015 Del.quantity cm3/: 116.0...118.0 1000H.: (113.0...121.0) Outside diameter x Wall thickness cm3/ : 4.00Dispersion 1000H.: (7.50) : 6.00x1.50x600 x Length mm HIGHEST RATED SPEED (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. 1st version Control-lever per values position degrees: 54...62 START OF DELIVERY Testing: 1st c-rod trav.mm: 10.70 Test pressure, bar: 25...27 Speed 1/min: 1240...1250 2nd c-rod trav.mm: 4.00 Speed 1/min: 1270...1300 : 3.00...3.10 Prestroke mm : (2.95...3.15) Contr.-rod trav.mm: 9.00...12.00 4th speed 1/min : 1420 Cam sequence : 1-5- 3- 6- 2- 4 C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I Control-lever position degrees: 13...21 Setting point w/out aux. spring 1/min : 200 Speed Contr.-rod trav.mm: 4.8 Speed 1/min : 200 : 5.20...5.40 : 2.00 C-rod trav.mm C-rod trav.mm 1/min : 270...330 Speed compensator (LDA, ADA, ALDA) 1st version Setting 1/min : 500 Speed Pressure hPa : 900 Contr.-rod trav.mm: 11.70...11.80 Measurement 1/min : 500 Speed 1st pressure hPa : -: 9.40...9.50 C-rod trav.mm 2nd pressure hPa : 680 C-rod trav.mm : 11.50...11.60 3rd pressure hPa : 290 C-rod trav.mm : 9.70...9.90 FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : -1/min : 700 Del.quantity cm3/: 76.0...78.0 1000H:: (73.0...81.0)

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                    SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Note inst. in remarks column
                   : PEN 7.1 A 3 : 11.3.87
Test sheet
Edition
                                                    SD mark cyl. no. : 1
Superceeded
                   : ISO-4113
                                                    BASIC SETTING
Calibrating oil
Combination no.
                   : 0 401 876 324
                                                    1st speed
                                                                   1/mi: 700
                                                    Contr.-rod trav.mm: 12.40...12.50
Injection pump
                   : PE6P110A320RS492
Pump designation
EP type number
                                                    Del.quantity cm3/: 12.6...12.8
                   : 0 411 816 161
Governor
Governor design.
                   : RSV200...1000P1A305-
                                                                  100H.: (12.3...13.1)
                   : 0 421 833 208
Governer no.
                                                    Dispersion
                                                                  cm3/:0.4
Customer-spec. information
                                                                  100H.: (0.7)
Customer
                   : VOLVO-PENTA
                                                    2nd speed 1/min: 200.0 Contr.-rod trav. m: 5.4...5.6
                   : TD71ACE
Engine
                                                    Del.quantity cm3/: 1.6...2.2
100H.: (-)
TEST BENCH REQUIREMENTS
                                                                  cm3/:0.3
                                                    Dispersion
Calibrating-oil inlet temp. OC
                                                                  100H.: (0.6)
                   : 38...42
                                                    SLEEVE POSITION
Overflow valve
                                                    Control-lever position
                   : 1 417 413 025
                                                                 Degree: -3
1/min: 800
                                                    Speed
Inlet press., bar : 1.50
                                                    Cont.-rod travelmm: 0.30...0.70
Calibrating nozzle-holder
                                                    Governor-spring reload
                  : 0 681 343 009
 assembly
                                                    Notch setting x : 4.25
Opening
                                                    FULL-LOAD DELIV. AT FULL-LOAD STOP
pressure, bar : 172...175
                                                    1st version
                                                    Speed
                                                                  1/min: 700
                                                    Del.quantity cm3/: 126.0...128.0
                   : 1 680 750 015
Test inj. tubing
                                                                 1000H.: (123.0...131.0)
                                                    Dispersion cm3/: 4.00
1000H.: (7.50)
Outside diameter
x Wall thickness
                   : 6.00x1.50x600
x Length mm
                                                    HIGHEST RATED SPEED
(A) Injection pump setting values
                                                    1st version
    Insp. values in parentheses
Set constant delivery quant.
                                                    Control-lever
                                                     position degrees: 50...58
    per values
                                                    Testing:
START OF DELIVERY
                                                    1st c-rod trav.mm : 11.40
                                                               1/min : 1010...1020
Test pressure, bar: 25...27
                                                      Speed
                                                    2nd c-rod trav.mm: 4.00
                                                                 1/min : 1050...1080
Prestroke mm
                   : 3.00...3.10
                                                      Speed
                   : (2.95...3.15)
                                                                 1/min : 1210
                                                    4th speed
Contr.-rod trav.mm: 9.00...12.00
                                                                       : 0.30...1.40
                                                      C-rod trav.mm
Cam sequence : 1-5- 3- 6- 2- 4
                                                    LOWEST RATED SPEED I
BO0
```

Control-lever

Control-lever
position degrees: 13...21
Setting point w/out aux. spring
Speed i/min: 200
Contr.-rod trav.mm: 5.0
Speed 1/min: 200
C-rod trav.mm : 5.40...5.60
C-rod trav.mm : 2.00
Speed 1/min: 280...340

BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Note inst. in remarks column Test sheet : SCA 8,0 K SD mark cyt. no. : 1 Edition : 09.03.87 Superceeded : 5.85 : ISO-4113 BASIC SETTING Calibrating oil 1st speed 1/mi: 700 Combination no. : 0 401 876 715 Contr.-rod trav.mm: 12.80...12.90 Injection pump Pump designation : PE6P110A72ORS3034 Del.quantity cm3/: 12.1...12.3 EP type number : 0 411 816 711 100H.: (11.9...12.5) Governor Governor design. : RSV350...1200P1/462 : 0 421 833 110 Governer no. Dispersion cm3/:0.5100H.: (0.7) Customer-spec. information Customer : SCANIA 2nd speed 1/min: 350.0 Contr.-rod trav. m: 5.9...6.1 : DS8 40 Engine Del.quantity cm3/: 1.5...2.1 100H.: (-) TEST BENCH REQUIREMENTS cm3/: 0.2 100H.: (0.4) Dispersion Calibrating-oil inlet temp. OC : 38...42 SLEEVE POSITION Overflow valve Control-lever position : 1 417 413 025 Degree: -3 17min: 800 Cont.-rod travelmm: 0.30...1.00 Inlet press., bar: 1.50 FULL-LOAD DELIV. AT FULL-LOAD STOP Calibrating nozzle-holder : 0 681 343 009 assembly 1st version Speed 1/min: 700 Opening Del.quantity cm3/: 121.0...123.0 pressure, bar : 172...175 1000H.: (119.0...125.0) Dispersion cm3/: 5.00 1000H.: (7.00) Test inj. tubing : 1 680 750 015 Outside diameter HIGHEST RATED SPEED x Wall thickness 1st version : 6.00x1.50x600 Control-lever x Length mm position degrees: 67...75 (A) Injection pump setting values Insp. values in parentheses Testing: Set constant delivery quant. 1st c-rod trav.mm : 11.80 per values 1/min : 1240...1250 Speed 2nd c-rod trav.mm : 4.00 Speed 1/min: 1310...1340 th speed 1/min: 1450 START OF DELIVERY Test pressure, bar: 25...27 4th speed : 0.30...1.70 C-rod trav.mm Prestroke mm : 3.30...3.40 : (3.25...3.45) LOWEST RATED SPEED I Contr.-rod trav.mm: 9.00...12.00 Control-lever Cam sequence : 1-5-3-6-2-4 position degrees: 25...33 Setting point w/out aux. spring Speed 1/min : 350 D10

Contr.-rod trav.mm: 5.5
Speed 1/min: 350
C-rod trav.mm: 5.90...6.10
C-rod trav.mn: 2.00
Speed 1/min: 500...560

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min: 1200 Del.quantity cm3/: 126.5...131.5 1000H.: (125.0...133.0)

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                             : 4.00...4.10
                                                        Prestroke mm
                                                                             : (3.95...4.15)
Note inst. in remarks column
                                                        Contr.-rod trav.mm: 9.00...12.00
                                                        Cam sequence : 6- 3- 5- 2- 4- 1
Test sheet
Edition
Superceeded
                   : MB 11.0 K 1
: 12.09.86
                   : 3.85
                                                        SD ang. spacing CS: 0-45-120-165-240-285
Tolerance + - 0.50 (0.75)
Calibrating oil : ISO-4113
Combination no. : 0 401 876 723
                                                        SD mark cyl. no. : 6
Injection pump
Pump designation : PE6P110A320LS3814-10
                                                        BASIC SETTING
EP type number : 0 411 816 741
Governor
                                                                     1/mi: 1139
                                                        1st speed
Governor design. : RSV350...1150P0A810
Governer no. : 0 421 833 164
                                                        Contr.-rod trav.mm: 12.10...12.20
                                                        Del.quantity cm3/: 13.5...13.7
Customer-spec. information
Customer
                    : DAIMLER-BENZ
                                                                       100H.: (13.2...13.9)
                    : 0M421
Engine
                                                                       cm3/:0.4
                                                        Dispersion
1st version kW : 159.0
             1/min: 2300
                                                                       100H.: (0.8)
Speed
                                                        2nd speed 1/min: 350.0

Contr.-rod trav. m: 7.7...7.9

Del.quantity cm3/: 1.4...2.0

100H.: (1.1...2.2)

Dispersion cm3/: 0.4
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                    : 38...42
                                                                       100H.: (0.7)
Overflow valve
                     : 1 417 413 025
                                                        SLEEVE POSITION
                                                        Control-lever position
Inlet press., bar: 1.50
                                                                     Degree: -3
1/min: 800
Over flow
                                                        Speed
                                                        Cont.-rod travelmm: 0.30...0.70
 quantity min. 1/h: 100...120
Calibrating nozzle-holder
                                                        Governor-spring reload
           : 0 681 343 009
 assembly
                                                        Notch setting x :?
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
pressure, bar : 172...175
                                                        1st version
                                                                       1/min: 1130
                                                        Speed
                                                        Del.quantity cm3/: 135.0...137.0
Test inj. tubing : 1 680 750 015
                                                                      1000H.: (132.5...139.5)
                                                                     cm3/ : 4.00
Outside diameter
                                                        Dispersion
                                                                      1000H.: (8,00)
x Wall thickness
                   : 6.00x1.50x600
x Length mm
                                                        HIGHEST RATED SPEED
(A) Injection pump setting values
                                                        1st version
    Insp. values in parentheses
Set constant delivery quant.
                                                        Control-lever
                                                         position degrees: 47...53
    per values ____
                                                        Testing:
                                                        1st c-rod trav.mm : 11.10
Speed 1/min : 1165...1175
2nd c-rod trav.mm : 4.00
START OF DELIVERY
Test pressure, bar: 25...27
```

Speed 1/min: 1230...1260 4th speed 1/min: 1400 C-rod trav.mm: 0.30...1.40

LOWEST RATED SPEED I

Control-lever position degrees: 24...32

Setting point w/out aux. spring

Speed 1/min: 350
Contr.-rod trav.mm: 7.8
Speed 1/min: 350
C-rod trav.mm: 7.70...7.90
C-rod trav.mm: 2.00
Speed 1/min: 430...490

:

SET IDLE AUXILIARY SPRING Contr.-rod trav.mm: 2.00

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      Prestroke mm
                                                                          : 2.40...2.50
                                                                          : (2.35...2.55)
                                                      Contr.-rod trav.mm: 9,00...12.00
Note inst. in remarks column
                                                      Cam sequence : 1-5-3-6-2-4
Test sheet
Edition
Superceeded
                   : PEN 12,0 D1
                   : 12.09.86
: 5.85
                                                      SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Calibrating oil : ISO-4113
Combination no.
                   : 0 401 876 731
                                                      SD mark cyl. no. : 1
Injection pump
Pump designation : PE6P12OA32OR$3088-2
                                                      BASIC SETTING
EP type number : 0 411 826 728
Governor
                                                      1st speed
                                                                      1/mi: 700
Governor design. : RSV650...750P4/421
Governer no. : 0 421 833 120
                                                      Contr.-rod trav.mm: 11.50...11.60
                                                      Del.quantity cm3/: 19.0...19.2
Customer-spec. information
                   : VOLVO-PENTA
Customer
                                                                     100H.: (18.7...19.5)
                    : TD121GG
Engine
                                                                     cm3/:0.5
                                                      Dispersion
1st version kW : 230.0
              1/min: 1500
                                                                     100H.: (0.9)
Speed
                                                                     1/min: 650.0
TEST BENCH REQUIREMENTS
                                                      2nd speed
                                                      Contr.-rod trav. m: 3.2...3.4
Del.quantity cm3/: 2.9...2.4
100H.: (-)
Dispersion cm3/: 0.5
100H.: (0.7)
Calibrating-oil inlet temp. °C
                   : 38...42
Overflow valve
                    : 1 417 413 025
                                                      SLEEVE POSITION
Inlet press., bar: 1.50
                                                      Control-lever position
                                                                    Degree: -3
                                                                    17min: 800
Calibrating nozzle-holder
                                                      Cont.-rod travelmm: 0.30...1.70
 assembly
                : 1 688 901 019
Opening.
                                                      Governor-spring reload
 pressūre, bar
                   : 207...210
                                                      Notch setting x : 2.75
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Perforated-plate
 diameter mm
                    : 0,8
                                                      1st version
                                                                     1/min: 700
                                                      Speed
                                                      Del.quantity cm3/: 190.0...192.0
1000H.: (187.0...195.0)
                   : 1 680 750 067
Test inj. tubing
                                                      Dispersion cm3/ : 5.00
Outside diameter
x Wall thickness
                                                                    1000H.: (9.00)
                    : 6.00x1.50x1000
x Length mm
                                                      HIGHEST RATED SPEED
(A) Injection pump setting values
                                                      1st version
    Insp. values in parentheses
                                                      Control-lever
    Set constant delivery quant.
                                                       position degrees: 35...43
    per values ____
                                                      Testing:
                                                      1st c-rod trav.mm : 10.50
Speed 1/min : 750...755
START OF DELIVERY
Test pressure, bar: 25...27
                                                      2nd c-rod trav.mm : 4.00
```

Speed 1/min: 776...789
4th speed 1/min: 930
C-rod trav.mm: 0.30...1.70

LOWEST RATED SPEED I

Control-lever position degrees: 28...36 Setting point w/out aux. spring Speed 1/min: 650
Contr.-rod trav.mm: 3.3
Speed 1/min: 650
C-rod trav.mm: 3.20...3.40
C-rod trav.mm: 2.00
Speed 1/min: 630...690

Remarks:

D15

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                            : 1-5- 3- 6- 2- 4
                                                        Cam sequence
Note inst. in remarks column
Test sheet
Edition
Superceeded
                                                        SD ang. spacing ^{\circ} CS: 0-60-120-180-240-300 Tolerance + - ^{\circ} : 0.50 (0.75)
                   : VOL 12.0 L1 : 12.09.86
                   : 5.85
Calibrating oil : ISO-4113
                                                        SD mark cyl. no. : 1
                   : 0 401 876 735
Combination no.
                                                       BASIC SETTING
Injection pump
                                                                        1/mi: 700
                                                        1st speed
Pump designation : PE6P120A320RS3088
EP type number
                  : 0 411 826 720
                                                        Contr.-rod trav.mm: 11.70...11.80
Governor
                                                       Del.quantity cm3/ : 17.7...17.9
Governor design. : RSV200...1000P4/421
Governer no. : 0 421 833 142
                                                                      100H.: (17.4...18.2)
Customer-spec. information
                                                                      cm3/ : 0.5
Customer
                    : VOLVO
                                                       Dispersion
Engine
                     : TD121G
                                                                      190H.: (0.9)
TEST BENCH REQUIREMENTS
                                                        2nd speed
                                                                      1/min: 250.0
                                                        Contr.-rod trav. m: 4.0...4.2
                                                       Del.quantity cm3/: 1.6...2.0
100H.: (1.3...2.3)
Dispersion cm3/: 0.5
Calibrating-oil inlet temp. °C
                     : 38...42
                                                                      100H.: (0.7)
Overflow valve
                     : 1 417 413 025
                                                        SLEEVE POSITION
                                                       Control-lever position
Inlet press., bar : 1.50
                                                                     Degree: -3
1/min: 800
Calibrating nozzle-holder
                : 1 688 901 019
                                                        Cont.-rod travelmm: 0.30...1.70
 assembly
Opening.
                                                       Governor-spring reload
                                                       Notch setting x :?
                     : 207...210
 pressure, bar
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
Perforated-plate
 diameter mm
                     : 0.8
                                                       1st version
                                                                      1/min: 700
                                                       Speed
                                                       Del.quantity cm3/: 177.0...179.0
1000H.: (174.0...182.0)
Test inj. tubing : 1 680 750 067
                                                                     cm3/ : 5.00
Outside diameter
                                                       Dispersion
                                                                     1000H.: (9.00)
x Wall thickness
                : 6.00x1.50x1000
x Length mm
                                                       HIGHEST RATED SPEED
(A) Injection pump setting values
                                                       1st version
    Insp. values in parentheses
Set constant delivery quant.
                                                       Control-lever
                                                        position degrees: 54...62
    per values ____
                                                       Testing:
                                                       1st c-rod trav.mm : 10.70
Speed 1/min : 1020...1030
2nd c-rod trav.mm : 4.00
START OF DELIVERY
Test pressure, bar: 25...27
                                                         Speed 1/min: 1040...1070
th speed 1/min: 1210
                     : 2.40...2.50
Prestroke mm
                     : (2.35...2.55)
                                                       4th speed
Contr.-rod trav.mm: 9.00...12.00
                                                         C-rod trav.mm : 0.30...1.70
D16
```

LOWEST RATED SPEED I

Control-lever

control-lever
position degrees: 18...26
Setting point w/out aux. spring
Speed 1/min: 250
Contr.-rod trav.mm: 3.6
Speed 1/min: 250
C-rod trav.mm : 4.00...4.20
C-rod trav.mm : 2.00
Speed 1/min: 280...340

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      Prestroke mm
                                                                          : 4.00...4.10
                                                                          : (3.95...4.15)
Note inst. in remarks column
                                                      Contr.-rod trav.mm: 9.00...12.00
Test sheet
                                                      Cam sequence : 6-3-5-2-4-1
                    : MB 11,0 D 1
Edition
                    : 12.09.86
Superceeded
                    : 12.85
Calibrating oil
                   : ISO-4113
                                                      SD ang. spacing ^{0} CS: 0-45-120-165-240-285 Tolerance \div - ^{0} : 0.50 (0.75)
                    : 0 401 876 739
Combination no.
Injection pump
                                                      SD mark cyl. no. : 6
Pump designation
                    : PE6P110A320LS3805-10
EP type number
                    : 0 411 816 740
                                                      BASIC SETTING
Governor
Governor design.
                    : RSV650...1150P1A820-
                                                      1st speed
                                                                      1/mi: 1180
                    : 0 421 833 177
                                                      Contr.-rod trav.mm: 12.50...12.60
Governer no.
                                                      Del.quantity cm3/: 13.7...13.9
Customer-spec. information
Customer
                    : DAIMLER-BENZ
                                                                     100H.: (13.4...14.1)
Engine
                    : 0M421
                                                                    cm3/:0.4
                                                      Dispersion
1st version kW : 159.0
Speed
              1/min: 2300
                                                                     100H.: (0.8)
                                                      2nd speed 1/min: 650.0

Contr.-rod trav. m: 6.0...6.2

Del.quantity cm3/: 1.6...2.2

100H.: (1.3...2.4)

Dispersion cm3/: 0.4
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. C
                    : 38...42
                                                                     100H.: (0.7)
Overflow valve
                    : 1 417 413 025
                                                      SLEEVÉ POSITION
                                                      Control-lever position
Inlet press., bar: 1.50
                                                                   Degree: -3
1/min: 800
Over flow
                                                      Speed
                                                      Cont.-rod travelmm: 0.30...0.70
 quantity min. 1/h: 100...110
Calibrating nozzle-holder
                                                      Governor-spring reload
                : 0 681 343 009
 assembly
                                                      Notch setting x :?
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening.
 pressure, bar : 172...175
                                                      1st version
                                                      Speed
                                                                    1/min: 1180
                                                      Del.quantity cm3/: 137.0...139.0
Test inj. tubing : 1 680 750 015
                                                                   1000H: (134.5...141.5)
cm3/: 4.00
Outside diameter
                                                      Dispersion
x Wall thickness
                                                                   1000H.: (8.00)
                   : 6.00x1.50x600
x Length mm
                                                      HIGHEST RATED SPEED
(A) Injection pump setting values
                                                      1st version
    Insp. values in parentheses
Set constant delivery quant.
                                                      Control-lever
                                                       position degrees: 53...61
    per values ____
                                                      Testing:
START OF DELIVERY
                                                      1st c-rod trav.mm : 11.50
                                                        Speed 1/min: 1210...1220
Test pressure, bar: 25...27
D18
```

```
2nd c-rod trav.mm: 4.00
Speed 1/min: 1240...1260
4th speed 1/min: 1350
C-rod trav.mm: 0.30...1.40
LOWEST RATED SPEED I
Control-lever
 position degrees: 26...34
Setting point w/out aux. spring
Speed
           1/min : 650
Contr.-rod trav.mm: 6.1
Testing:
Speed
              1/min : 100
C-rod trav.mm min: 19.50
            1/min : 650
Speed
                 : 6.00...6.20
C-rod trav.mm
C-rod trav.mm
                    : 2.00
Speed
            1/min: 650...715
SET IDLE AUXILIARY SPRING
Contr.-rod trav.mm: 2.00
TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min: 1180
  C-rod trav.mm : 12.40...12.50
2nd speed 1/min: 970
C-rod trav.mm : 12.90...13.10
3rd speed 1/min : 1100
C-rod trav.mm : 12.50...12.70
4th speed 1/min : 700
  C-rod trav.mm : 13.10...13.30
FUEL-DELIVERY CHARACTERISTICS
             1/min : 970
Speed
Del.quantity cm3/: 137.0...141.0
1000H.: (134.0...144.0)
Dispersion cm3/: 6.00
              1000H.: (9.00)
```

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                      START OF DELIVERY
Note inst. in remarks column
                                                      Test pressure, bar: 25...27
Test sheet
                   : MB 11,0 Q 4
                                                                          : 4.00...4.10
                                                      Prestroke mm
                   : 12.09.86
Edition
                                                                          : (3.95...4.15)
Superceeded
                   : 3.85
                                                      Contr.-rod trav.mm: 9.00...12.00
Calibrating oil : ISO-4113
                                                      Cam sequence : 6- 3- 5- 2- 4- 1
                   : 0 401 876 740
Combination no.
                                                      SD ang. spacing CS: 0-45-120-165-240-285
Tolerance + - : 0.50 (0.75)
Injection pump
                   : PE6P12OA320L$3815-10
Pump designation
                    : 0 411 826 735
EP type number
Governor
                                                      SD mark cyl. no. : 6
                    : RSV750...1150P1A820-
Governor design.
                                                      BASIC SETTING
                    : 0 421 833 179
Governer no.
                                                      1st speed 1/mi: 1180
Customer-spec. information
Customer
                   : DAIMLER-BENZ
                                                      Contr.-rod trav.mm: 11.00...11.10
Engine
                    : 0M421A
                                                      Del.quantity cm3/: 16.3...16.5
1st version kW : 184.0
                                                                     100H.: (16.0...16.8)
              1/min: 2300
Speed
                                                                    cm3/:0.5
                                                      Dispersion
TEST BENCH REQUIREMENTS
                                                                    100H.: (0.9)
Calibrating-oil inlet temp. OC
                    : 38...42
                                                                    1/min: 750.0
                                                      2nd speed
                                                      Contr.-rod trav. m: 3.3...3.5

Del.quantity cm3/: 1.8...2.4

100H.: (1.5...2.7)

Dispersion cm3/: 0.8
Overflow valve
                    : 1 417 413 025
                                                                     100H.: (1.2)
Inlet press., bar: 1.50
Over flow
                                                      SLEEVE POSITION
 quantity min. 1/h: 100...120
                                                      Control-lever position
                                                                   Degree: -3
1/min: 800
Calibrating nozzle-holder
                                                      Speed
              : 1 688 901 019
 assembly
                                                      Cont.-rod travelmm: 0.30...0.70
gnin<del>g</del>q0
                                                      FULL-LOAD DÉLIV. AT FULL-LOAD STOP
                    : 207...210
 pressure, bar
                                                      1st version
Perforated-plate
                                                      Speed
                                                                    1/min: 1180
                                                      Del.quantity cm3/: 163.0...165.0
1000H.: (160.0...168.0)
Dispersion cm3/: 5.00
                    : 0.8
diameter mm
                                                                   1000H.: (9.00)
                   : 1 680 750 067
Test inj. tubing
                                                      HIGHEST RATED SPEED
Outside diameter
x Wall thickness
                                                      1st version
x Length mm
                    : 6.00x1.50x1000
                                                      Control-lever
                                                       position degrees: 56...64
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                      Testing:
                                                      1st c-rod trav.mm : 10.00
    per values
                                                        Speed 1/min: 1210...1220
```

2nd c-rod trav.mm: 4.00 Speed 1/min: 1235...1255 th speed 1/min: 1350 4th speed C-rod trav.mm : 0.30...1.40 LOWEST RATED SPEED I Control-lever position degrees: 32...40 Setting point w/out aux. spring Speed 1/min: 750
Contr.-rod trav.mm: 3.4
Speed 1/min: 750
C-rod trav.mm : 3.30...3.50
C-rod trav.mm : 2.00
Speed 1/min: 755...815 SET IDLE AUXILIARY SPRING Contr.-rod trav.mm: 2.00 TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min : 1180 C-rod trav.mm : 11.00...11.10 1/min : 975 2nd speed C-rod trav.mm : 11.60...11.80 3rd speed 1/min: 600 C-rod trav.mm : 11.80...12.00 FUEL-DELIVERY CHARACTERISTICS 1/min : 975 Speed Del.quantity cm3/: 174.0...180.0 1000H.: (171.0...183.0) cm3/:8.0Dispersion 1000H.: (12.0)

```
Cam sequence : 1-5-3-6-2-4
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
Test sheet
                   : PEN 7,1 C
                                                     SD ang. spacing<sup>0</sup>CS: 0-60-120-180-240-300
Tolerance + - : 0.50 (0.75)
Edition
                   : 12.09.86
Superceeded
                                                     SD mark cyl. no. : 1
Calibrating oil : ISO-4113
Combination no.
                   : 0 401 876 743
                                                     BASIC SETTING
Injection pump
                                                                    1/mi: 700
                                                     1st speed
Pump designation : PE6P110A320R$3147
EP type number : 0 411 816 743
                                                     Contr.-rod trav.mm: 11.20...11.30
Governor
Governor design. : RSV650...750P4/421
                                                     Del.quantity cm3/: 15.8...16.0
Governer no.
                  : 0 421 833 120
                                                                   100H.: (15.5...16.3)
Customer-spec. information
                   : VOLVO-PENTA
                                                                   cm3/:0.4
Customer
                                                     Dispersion
                   : TID 71AG
Engine
                                                                   100H.: (0.7)
1st version kW : 153.0
                                                                   1/min: 650.0
                                                     2nd speed
             1/min: 1500
                                                     Contr.-rod trav. m: 4.0...4.2
Speed
                                                     Del.quantity cm3/: 1.7...2.1
                                                                   100H.: (1.4...2.3)
TEST BENCH REQUIREMENTS
                                                                   cm3/: 0.3
100H.: (0.6)
                                                     Dispersion
Calibrating-oil inlet temp. °C
                    : 38...42
                                                     SLEEVE POSITION
Overflow valve
                                                     Control-lever position
                                                                  Degree: -3
1/min: 800
                    : 1 417 413 025
                                                     Cont.-rod travelmm: 0.30...1.00
Inlet press., bar : 1.50
Calibrating nozzle-holder
                                                     Governor-spring reload_
                  : 0 681 343 009
 assembly
                                                     Notch setting x : 2.75
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
pressure, bar : 172...175
                                                     1st version
                                                     Speed
                                                                   1/min: 700
                                                     Del.quantity cm3/: 158.0...160.0
Test inj. tubing : 1 680 750 015
                                                                  1000H.: (155.0...163.0)
cm3/ : 4.00
1000H.: (7.50)
Outside diameter
                                                     Dispersion
x Wall thickness
x Length mm
               : 6.00x1.50x600
                                                     HIGHEST RATED SPEED
(A) Injection pump setting values
                                                     1st version
    Insp. values in parentheses
Set constant delivery quant.
                                                     Control-lever
                                                      position degrees: 35...43
    per values ____
                                                     Testing:
                                                     1st c-rod trav.mm : 10.20
Speed 1/min : 750...755
START OF DELIVERY
Test pressure, bar: 25...27
                                                     2nd c-rod trav.mm : 4.00
                    : 3.50...3.60
                                                       Speed
                                                                 1/min: 776...789
Prestroke mm
                   : (3.45...3.65)
                                                                1/min : 930
                                                     4th speed
Contr.-rod trav.mm: 9.00...12.00
                                                       C-rod trav.mm : 0.30...1.70
D22
```

LOWEST RATED SPEED I

Control-lever

position degrees: 29...37 Setting point w/out aux. spring

Speed 1/min: 650 Contr.-rod trav.mm: 4.1 Speed 1/min: 650

C-rod trav.mm : 4.00...4.20 C-rod trav.mm : 2.00

Speed 1/min: 640...700

SET IDLE AUXILIARY SPRING Contr.-rod trav.mm: 2.00

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                           : 1-5-3-6-2-4
                                                       Cam sequence
Note inst. in remarks column
                                                       SD ang. spacing ^{0}CS: 0-60-120-180-240-300 Tolerance + - ^{8} : 0.50 (0.75)
Test sheet
                     : PEN 7,1 C 1
Edition
                     : 12.09.86
Superceeded
Calibrating oil : ISO-4113
                                                       SD mark cyl. no. : 1
Combination no.
                    : 0 401 876 744
                                                       BASIC SETTING
Injection pump
                                                                       1/mi: 700
                                                       1st speed
Pump designation : PE6P110A320RS3147
EP type number
                    : 0 411 816 743
                                                       Contr.-rod trav.mm: 10.90...11.00
Governor
                    : RSV650...750P4/421-2
: 0 421 833 198
Governor design.
                                                       Del.quantity cm3/: 14.6...14.8
Governer no.
                                                                      100H.: (14.3...15.1)
Customer-spec. information
Customer
                    : VOLVO-PENTA
                                                                      cm3/:0.4
                                                       Dispersion
Engine
                    : TD71AG
                                                                      100H.: (0.7)
1st version kW : 127.0
                                                       2nd speed
                                                                      1/min: 650.0
                                                       Contr.-rod trav. m: 4.1...4.3
Speed
               1/min: 1500
                                                       Del.quantity cm3/: 1.7...2.1
100H.: (1.4...2.3)
TEST BENCH REQUIREMENTS
                                                                      cm3/: 0.6
100H.: (0.9)
                                                       Dispersion
Calibrating-oil inlet temp. OC
                     : 38...42
                                                       SLEEVE POSITION
Overflow valve
                                                       Control-lever position
                                                                     Degree: -3
1/min: 800
                     : 1 417 413 025
                                                       Speed
                                                       Cont.-rod travelmm: 0.30...1.00
Inlet press., bar : 1.50
                                                       Governor-spring reload Notch setting x : 5.25
Calibrating nozzle-holder
 assembly
                   : 0 681 343 009
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
 pressure, bar : 172...175
                                                       1st version
                                                       Speed
                                                                      1/min: 700
                                                       Del.quantity cm3/: 146.0...148.0
1000H:: (143.0...151.0)
Dispersion cm3/: 4.00
1000H:: (7.50)
Test inj. tubing : 1 680 750 015
Outside diameter
x Wall thickness
                   : 6.00x1.50x600
x Length mm
                                                       HIGHEST RATED SPEED
(A) Injection pump setting values
                                                       1st version
    Insp. values in parentheses
Set constant delivery quant.
                                                       Control-lever
                                                        position degrees: 43...51
    per values ____
                                                       Testing:
START OF DELIVERY
                                                       1st c-rod trav.mm : 9.90
Speed 1/min : 742...747
Test pressure, bar: 25...27
                                                       2nd c-rod trav.mm: 4.00
Prestroke mm'
                    : 3.50...3.60
                                                                    1/min: 771...784
                                                         Speed
                    : (3.45...3.65)
                                                                     1/min: 940
                                                       4th speed
Contr.-rod trav.mm: 9.00...12.00
                                                         C-rod trav.mm
                                                                           : 0.30...1.70
D24
```

LOWEST RATED SPEED I Control-lever

position degrees: 37...45
Setting point W/out aux. spring
Speed 1/min: 650
Contr.-rod trav.mm: 4.2

Speed 1/min: 650 C-rod trav.mm : 4.10...4.30 C-rod trav.mm : 2.00 Speed 1/min: 635...695

```
Cam sequence : 1- 5- 3- 6- 2- 4
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
                                                    SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
Test sheet
                   : PEN 10,0 H
                   : 12.09.86
Edition
Superceeded
Calibrating oil : ISO-4113
                                                    SD mark cyl. no. : 1
Combination no.
                   : 0 401 876 746
                                                    BASIC SETTING
Injection pump
                                                    1st speed
                                                                   1/mi: 700
Pump designation : PE6P110A320RS3156
EP type number
                  : 0 411 816 747
                                                    Contr.-rod trav.mm: 13.10...13.20
Governor
Governor design. : RSV200...750P4/421
                                                    Del.quantity cm3/: 18.1...18.3
Governer no.
                  : 0 421 833 118
                                                                  100H.: (17.8...18.6)
Customer-spec. information
Customer
                   : VOLVO-PENTA
                                                    Dispersion
                                                                  cm3/:0.4
                   : TD100GG
                                                                  100H.: (0.7)
Engine
1st version kW : 179.0
                                                    2nd speed
                                                                  1/min: 250.0
                                                    Contr.-rod trav. m: 4.1...4.3
Del.quantity cm3/: 1.7...2.1
Speed
             1/min: 1500
                                                                  100H.: (1.4...2.3) cm3/: 0.3
TEST BENCH REQUIREMENTS
                                                    Dispersion
Calibrating-oil inlet temp. °C
                                                                  100H.: (0.6)
                   : 38...42
                                                    SLEEVE POSITION
Overflow valve
                                                    Control-lever position
                                                                 Degree: -3
1/min: 800
                   : 1 417 413 025
                                                    Speed
Inlet press., bar : 1.50
                                                    Cont.-rod travelmm: 0.30...1.00
Calibrating nozzle-holder
                                                    Governor-spring reload
                  : 0 681 343 009
                                                    Notch setting x :?
 assembly
                                                    FULL-LOAD DELIV. AT FULL-LOAD STOP
Opening
pressure, bar : 172...175
                                                    1st version
                                                    Speed
                                                                  1/min: 700
                                                    Del.quantity cm3/: 181.0...183.0
Test in j. tubing
                  : 1 680 750 015
                                                                 1000H.: (178.0...186.0)
                                                                 cm3/ : 4.00
1000H.: (7.50)
Outside diameter
                                                    Dispersion
x Wall thickness
                  : 6.00x1.50x600
x Length mm
                                                    HIGHEST RATED SPEED
                                                    1st version
(A) Injection pump setting values
                                                    Control-lever
    Insp. values in parentheses
    Set constant delivery quant.
                                                     position degrees: 39...47
    per values ____
                                                    Testing:
                                                    1st c-rod trav.mm : 12.10
Speed 1/min : 755...765
START OF DELIVERY
Test pressure, bar: 25...27
                                                    2nd c-rod trav.mm : 4.00
Speed 1/min : 790...820
Prestroke mm
                   : 3.50...3.60
                   : (3.45...3.65)
                                                                 1/min : 950
                                                    4th speed
Contr.-rod trav.mm: 9.00...12.00
                                                      C-rod trav.mm : 0.30...1.70
D26
```

LOWEST RATED SPEED I Control-lever position degrees: 17...25
Setting point w/out aux. spring
Speed 1/min: 250
Contr.-rod trav.mm: 3.7
Speed 1/min: 250

C-rod trav.mm : 4.10...4.30 C-rod trav.mm : 2.00 Speed 1/min : 270...330

: 1-5-3-6-2-4 BOSCH INJ. PUMP TEST SPECIFICATIONS Cam sequence Note inst. in remarks column SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Test sheet : PEN 7,1 D Edition : 12.09.86 Superceeded Calibrating oil : ISO-4113 SD mark cyl. no. : 1 Combination no. : 0 401 876 749 BASIC SETTING 1/mi: 750 Injection pump 1st speed : PE6P120A320RS3163 Pump designation Contr.-rod trav.mm: 12.80...12.90 EP type number : 0 411 826 750 Governor Governor design. : RSV250...1250P0A374 Governer no. : 0 421 833 222 Del.quantity cm3/: 20.1...20.3 100H.: (19.8...20.6) Customer-spec. information : VOLVO PENTA Customer Dispersion cm3/ : 0.5: TAMD 71 A 100H.: (0.9) Engine TEST BENCH REQUIREMENTS 1/min: 250.0 2nd speed Contr.-rod trav. m: 4.0...4.2 Del.quantity cm3/: 1.1...1.5 100H.: (-) Dispersion cm3/: 0.5 100H.: (0.7) Calibrating-oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 025 SLEEVE POSITION Control-lever position Inlet press., bar: 1.50 Degree: -3 Calibrating nozzle-holder Speed 17min: 800 Cont.-rod travelmm: 0.30...0.70 : 1 688 901 019 assembly Governor-spring reload Opening prossure, bar : 207...210 Notch setting x : 3.75 FULL-LOAD DELIV. AT FULL-LOAD STOP Perforated-plate diameter mm : 0,8 1st version Speed 1/min: 750 Charge press. hPa: 1500
Del.quantity cm3/: 201.0...203.0
1000H:: (198.0...206.0)
Dispersion cm3/: 5.00
1000H:: (9.00) Test inj. tubing : 1 680 750 067 Outside diameter x Wall thickness x Length mm : 6.00x1.50x1000 HIGHEST RATED SPEED (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. 1st version Control lever per values ____ position degrees: 53...61 START OF DELIVERY Testing: Test pressure, bar: 25...27 1st c-rod trav.mm : 11.80 Speed 1/min: 1290...1300 2nd c-rod trav.mm: 4.00 Prestroke mm : 2.80...2.90 1/min : 1370...1400 : (2.75...2.95) Speed 4th speed 1/min: 1500 Contr.-rod trav.mm: 9.00...12.00 D28

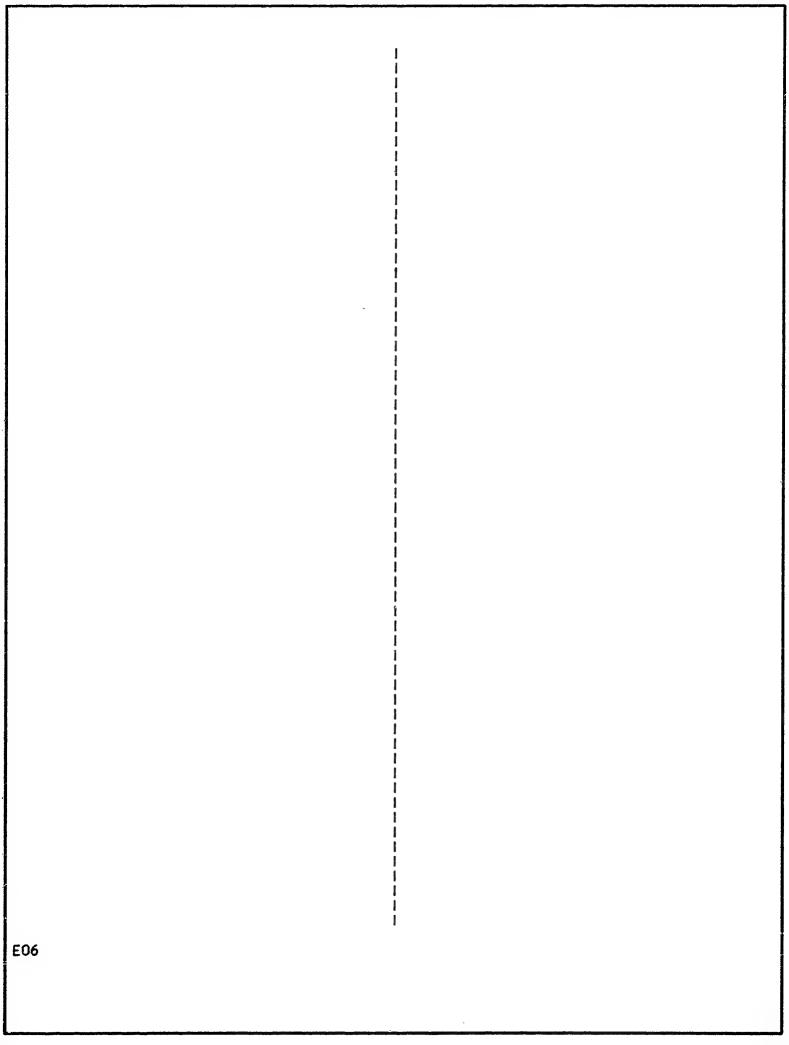
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C-rod trav.mm : 0.30...1.40
LOWEST RATED SPEED I
Control-Lever
 position degrees: 22...30
Setting point w/out aux. spring
           1/min : 250
Speed
Contr.-rod trav.mm: 3.6
            1/min : 250
Speed
                : 4.00...4.20
C-rod trav.mm
                 : 2.00
C-rod trav.mm
           1/min : 360...420
Speed
 compensator (LDA, ADA, ALDA)
1st version
Setting
            1/min : 500
Speed
Pressure
            hPa : 1500
Contr.-rod trav.mm: 12.80...12.90
Measurement
            1/min : 500
Speed
1st pressure hPa : -
  C-rod trav.mm : 7.80...7.90
2nd pressure hPa : 1000
  C-rod trav.mm : 11.50...11.60
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 1500
            1/min : 1250
Speed
Del.quantity cm3/: 198.0...204.0
1000H.: (195.0...207.0)
Charge press. hPa : -
Speed 1/min : 500
Del.quantity cm3/ : 77.0...81.0
            1000H.: (74.0...84.0)
```

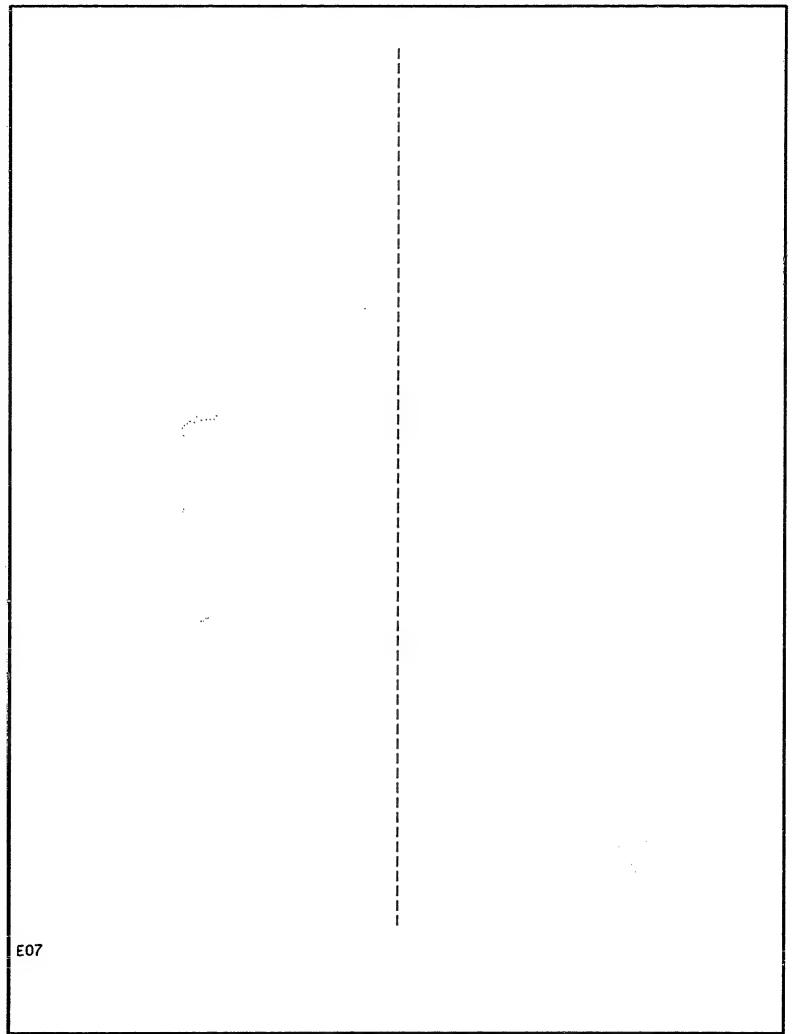
```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                       START OF DELIVERY
Note inst. in remarks column
                                                       Test pressure, bar: 25...27
Test sheet
                                                       Prestroke mm : 4.00...4.10 : (3.95...4.15)
Contr.-rod trav.mm: 9.00...12.00
                    : MB 11,0 Q 7
                    : 12.09.86
Edition
Superceeded
                                                       Cam sequence : 6-3-5-2-4-1
Calibrating oil : ISO-4113
                    : 0 401 876 753
Combination no.
                                                       SD ang. spacing CS: 0-45-120-165-240-285 Tolerance + - : 0.50 (0.75)
Injection pump
Pump designation : PE6P120A320LS3815-10
EP type number
                    : 0 411 826 735
                                                       SD mark cyl. no. : 6
Governor
Governor design. : RSV750...1150P1A820-
                                                       BASIC SETTING
Governer no.
                    : 0 421 833 227
                                                       1st speed 1/mi: 1180
Customer-spec. information
                                                       Contr.-rod trav.mm: 10.70...10.80
Customer
                   : DAIMLER-BENZ
                                                      Del.quantity cm3/ : 15.8...16.0
Engine
                    : 0M421A
                                                                     100H.: (15.5...16.3)
1st version kW : 184.0
              1/min: 2300
Speed
                                                       Dispersion
                                                                     cm3/:0.5
TEST BENCH REQUIREMENTS
                                                                     100H.: (0.9)
Calibrating-oil inlet temp. OC
                                                      2nd speed 1/min: 750.0
Contr.-rod trav. m: 3.4...3.6
Del.quantity cm3/: 1.8...2.4
                    : 38...42
Overflow valve
                                                                     100H.: (1.5...2.7)
cm3/: 0.8
                    : 1 417 413 025
                                                       Dispersion
                                                                     100H.: (1.2)
Inlet press., bar: 1.50
Over flow
                                                       SLEEVE POSITION
 quantity min. 1/h: 100...120
                                                       Control-lever position
                                                                    Degree: -3
1/min: 800
Calibrating nozzle-holder
                                                       Speed
                : 1 688 901 019
                                                       Cont.-rod travelmm: 0.30...0.70
 assembly
                                                       Governor-spring reload
Opening
                    : 207...210
                                                       Notch setting x :?
 pressure, bar
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
Perforated-plate
 diameter mm
                    : 0,8
                                                       1st version
                                                                     1/min: 1180
                                                       Speed
                                                      Del.quantity cm3/: 158.0...160.0
Test inj. tubing : 1 680 750 067
                                                                    1000H.: (155.0...163.0)
cm3/ : 5.00
1000H.: (9.50)
Outside diameter
                                                       Dispersion
x Wall thickness
x Length mm
                  : 6.00x1.50x1000
                                                      HIGHEST RATED SPEED
(A) Injection pump setting values
                                                       1st version
    Insp. values in parentheses
Set constant delivery quant.
                                                       Control-lever
                                                       position degrees: 56...64
    per values ____
E02
```

Testing: 1st c-rod trav.mm: 9.70 Speed 1/min: 1210...1220 2nd c-rod trav.mm: 4.00 Speed 1/min: 1240...1260 4th speed 1/min: 1350 C-rod trav.mm : 0.30...1.40 LOWEST RATED SPEED I Control-lever position degrees: 32...40
Speed 1/min: 750
C-rod trav.mm : 3.30...3.50
C-rod trav.mm : 2.00
Speed 1/min: 755...815 SET IDLE AUXILIARY SPRING Contr.-rod trav.mm: 2.00 TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min: 1180 C-rod trav.mm: 10.70...10.80 2nd speed 1/min: 950 C-rod trav.mm : 11.20...11.40 3rd speed 1/min: 1075 C-rod trav.mm : 11.00...11.20 FUEL-DELIVERY CHARACTERISTICS Speed 1/min: 975
Del.quantity cm3/: 169.0...175.0 1000H.: (166.0...178.0) cm3/: 8.0 Dispersion 1000H.: (12.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Note inst. in remarks column Test sheet : PEN 10,0 K : 07.11.86 Edition SD mark cyl. no. : 1 Superceeded Calibrating oil : ISO-4113 BASIC SETTING Combination no. : 0 401 876 754 1st speed 1/mi: 700 Contr.-rod trav.mm: 12.20...12.30 Injection pump Pump designation : PE6P110A320RS3152 Del.quantity cm3/: 16.7...16.9 EP type number : 0 411 816 746 Governor : RSV200...1100P1A515-100H.: (16.4...17.2) Governor design. : 0 421 833 247 Dispersion cm3/:0.4Governer no. 100H.: (0.7) Customer-spec. information : VOLVO-PENTA Customer 2nd speed 1/min: 250.0 Contr.-rod trav. m: 4.0...4.2 Engine : TD100G Del.quantity cm3/: 1.9...2.3 cm3/:0.4TEST BENCH REQUIREMENTS Dispersion 100H.: (0.7) Calibrating-oil inlet temp. C : 38...42 SLEEVE POSITION Control-lever position Degree: -3 1/min: 800 Overflow valve : 1 417 413 025 Cont.-rod travelmm: 0.30...0.70 Inlet press., bar: 1.50 Governor-spring reload Notch setting x : 6.00 Calibrating nozzle-holder : 0 681 343 009 assembly FULL-LOAD DELIV. AT FULL-LOAD STOP Opening pressure, bar : 172...175 1st version 1/min: 700 Speed Charge press. hPa: 1000
Del.quantity cm3/: 167.0...169.0
1000H.: (164.0...172.0)
Dispersion cm3/: 4.00
1000H.: (7.50) Test inj. tubing : 1 680 750 015 Outside diameter x Wall thickness : 6.00x1.50x600 x Length mm HIGHEST RATED SPEED (A) Injection pump setting values 1st version Insp. values in parentheses Set constant delivery quant. Control-lever position degrees: 71...79 per values ____ Testing: 1st c-rod trav.mm : 11.20 Speed 1/min : 1140...1150 2nd c-rod trav.mm : 4.00 START OF DELIVERY Test pressure, bar: 25...27 1/min: 1185...1215 : 3.50...3.60 Prestroke mm Speed : (3.45...3.65) 1/min : 1340 4th speed C-rod trav.mm : 0.30...1.40 Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1-5- 3- 6- 2- 4 LOWEST RATED SPEED I E04

```
Control-lever
 position degrees: 25...33
Setting point w/out aux. spring
Speed 1/min: 250
Contr.-rod trav.mm: 3.6
Speed 1/min: 250
C-rod trav.mm : 4.00...4.20
C-rod trav.mm : 2.00
            1/min : 280...340
Speed
 compensator (LDA, ADA, ALDA)
1st version
Setting
             1/min : 500
Speed
Pressure
             hPa : 1000
Contr.-rod trav.mm: 12.20...12.30
Measurement
             1/min : 500
Speed
1st pressure hPa : -
 C-rod trav.mm : 9.80...9.90
2nd pressure hPa : 590
  C-rod trav.mm : 12.00...12.10
3rd pressure hPa : 280
  C-rod trav.mm : 10.10...10.30
FUEL-DELIVERY CHARACTERISTICS
Charge press. hPa : -
Speed 1/min : 700
Del.quantity cm3/ : 122.0...124.0
             1000H.: (119.0...127.0)
Remarks:
```





BOSCH INJ. PUMP TEST SPECIFICATIONS BASIC SETTING Note inst. in remarks column 1/mi: 900 1st speed : DEE 10,6 D Test sheet Edition : 7.86 Contr.-rod trav.mm: 11,6 Superceeded Calibrating oil : ISO-4113 Del.quantity cm3/: 16,0...16,2 Combination no. : 0 402 076 038 Dispersion cm3/:0.40Injection pump 1/min: 400 2nd speed Contr.-rod trav. m: 6,3
Del.quantity cm3/: 1,9...2,5
Dispersion cm3/: 0,40 Pump designation : PES6P110A720RS296 Governor : RSV400...900P0/440DR Governor design. SLEEVE POSITION Customer-spec. information : JOHN DEERE Customer Control-lever position Degree: LOSE Engine : 6619 T 17min: 800 Cont.-rod travelmm: 0.3...1.0 TEST BENCH REQUIREMENTS Governor-spring reload Calibrating-oil inlet temp. OC Notch setting x : -: 38...42 FULL-LOAD DELIV. AT FULL-LOAD STOP Overflow valve : 1 457 413 010 1st version 1/min: 900 Speed Charge press. hPa : 800 Del.quantity cm3/ : 160,0...162,0 Inlet press., bar : 1.5 1000H.: (156,0...166,0) Calibrating nozzle-holder : 0 681 343 009 assembly HIGHEST RATED SPEED Opening 1st version pressure, bar : 172...175 Control-lever position degrees: 38...46 Test inj. tubing : 1 680 750 015 LOWEST RATED SPEED I Control-lever Outside diameter position degrees: 21...29 Setting point w/out aux. spring x Wall thickness : 6,00x1,50x600 1/min : 400 x Length mm Speed Contr.-rod trav.mm: 5,6...5,8 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. Testing: 1/min : 100 Speed ? per values C-rod trav.mm min : 19,0 1/min: 400 C-rod trav.mm : 6,1...6,3 C-rod trav.mm : 2,0 Speed 1/min : 470...530 START OF DELIVERY : 2,75...2,85 : 1-5-3-6-2-4 Prestroke mm Cam sequence compensator (LDA, ADA, ALDA) SD ang. spacing 0 CS: 0-60-120-180-240-300 Tolerance + - 0 : 0,5(0,75) 1st version Setting 1/min : 550 Speed hPa : 420 SD mark cyl. no. : 1 Pressure E08

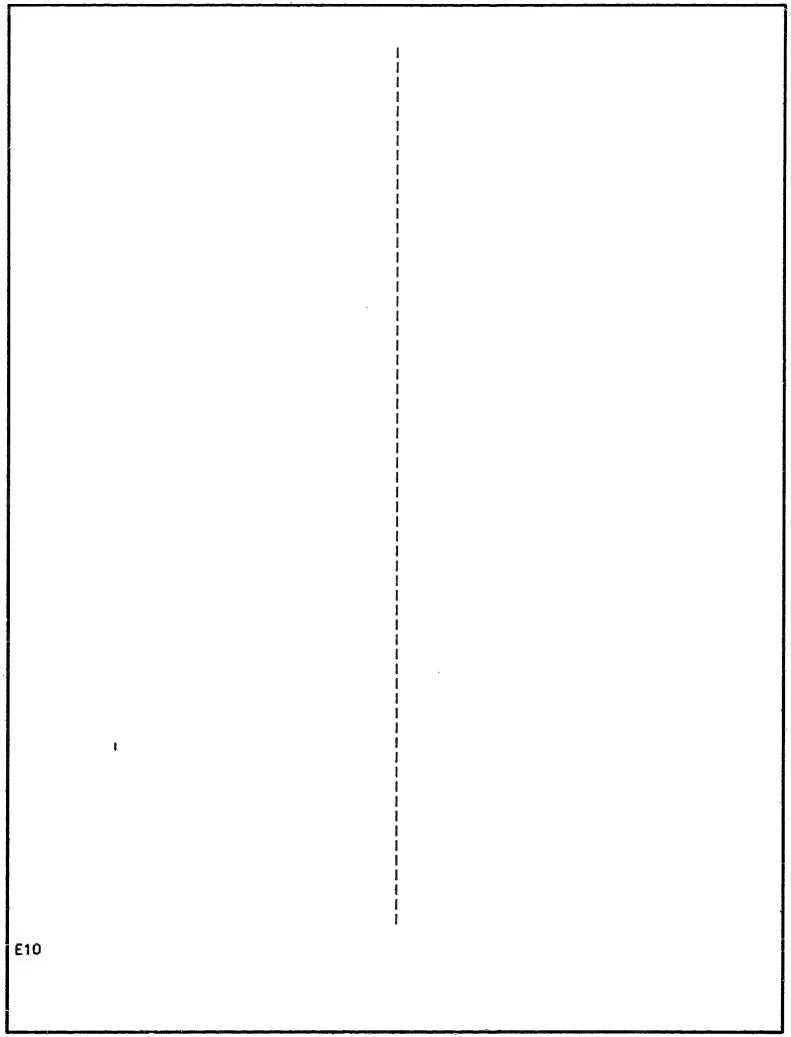
Contr.-rod trav.mm: 11,25...11,35 Measurement 1/min : 550 Speed 1st pressure hPa : 570

C-rod trav.mm : 12,28...12,32

FUEL-DELIVERY CHARACTERISTICS

1st version Charge press. hPa: 800 Speed 1/min: 650 Del.quantity cm3/: 177,0...180,0 1000H: (171,0...186,0) Speed 1/min: 550

Del.quantity cm3/: 135.0...141.0 1000H:: (129,0...147,0)



Cam sequence : 1-5-3-6-2-4 BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet Edition Superceeded SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) : IHC 7,6 R 1 : 09.03.87 Superceeded : 11.85 Calibrating oil : ISO-4113 BASIC SETTING Combination no. : 0 403 446 160 1/mi: 800 1st speed Contr.-rod trav.mm: 11.80...11.90 Injection pump Pump designation : PES6MW100/320RS1112 Del.quantity cm3/: 10.8...11.0 EP type number : 0 413 406 108 Governor Governor design. : RQV350...1200MW64 100H.: (10.6...11.2) Governer no. : 0 420 083 090 cm3/: 0.35Dispersion Customer-spec. information Customer : NAVI-STAR 100H.: (0.6) 2nd speed 1/min: 350.0 Contr.-rod trav. m: 5.9...6.0 Del.quantity cm3/: 1.8...2.2 100H.: (1.5...2.4) Dispersion cm3/: 0.35 : DTA-466C Engine 1st version kW : 157.0 1/min: 2400 Speed 100H.: (0.5) TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C SLEEVE POSITION : 38...42 Control-lever position Degree: -1 1/min: 1380 Overflow valve : 2 417 413 037 Cont.-rod travelmm: 6.70...9.30 FULL-LOAD DELIV. AT FULL-LOAD STOP Inlet press., bar : 2.80 Calibrating nozzle-holder 1st version : 1 688 901 016 1/min: 800 assembly Speed Charge press. hPa: 800 Del.quantity cm3/: 108.0...110.0 1000H:: (106.0...112.0) Dispersion cm3/: 3.50 1000H:: (6.00) Opening pressure, bar : 207...210 Test inj. tubing : 1 680 750 008 HIGHEST RATED SPEED Outside diameter 1st version x Wall thickness Control-lever : 6.00x2.00x600 position degrees: 43...48 x Length mm (A) Injection pump setting values Testing: Insp. values in parentheses Set constant delivery quant. 1st c-rod trav.mm: 10.50 Speed 1/min: 1260...1280 2nd c-rod trav.mm: 4.00 per values ____ 1/min : 1375...1385 1/min : 1450 Speed START OF DELIVERY 4th speed C-rod tray.mm : 0.00...1.00 Test pressure, bar: 30...32 Prestroke mm : 3.95...4.05 LOWEST RATED SPEED I : (3.90...4.10) Contr.-rod trav.mm: 9.00...12.00 Control-lever position degrees: 7...15

Setting point w/out aux. spring 1/min : 350 Speed Contr.-rod trav.mm: 5.9...6.0 Testing: 1/min : 100 Speed C-rod trav.mm min : 9.00 Speed 1/min : 350 : 5.90...6.00 C-rod trav.mm CONSTANT REGULATION 1/min : 370...450 Speed TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min: 800 C-rod trav.mm : 11.80...11.90 2nd speed 1/min : 1200 : 11.50...11.60 C-rod trav.mm 3rd speed 1/min : 1050 C-rod trav.mm : 11.60...11.80 4th speed 1/min : 1150 C-rod trav.mm : 11.50...11.60 compensator (LDA,ADA,ALDA) 1st version Setting 1/min : 500 Speed hPa : 130 Pressure Contr.-rod trav.mm: 11.00...11.10 Measurement 1/min : 500 Speed 1st pressure hPa : -: 10.70...10.80 C-rod trav.mm 2nd pressure hPa : 240 : 11.40...11.70 C-rod trav.mm 3rd pressure hPa : 800 C-rod tray.mm : 11.80...11.90 SWITCH-OVER POINT Speed 1/min : 280 (290) FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 800 1/min : 1200 Speed Del.quantity cm3/: 107.0...111.0 1000H.: (105.0...113.0) cm3/:6.50Dispersion 1000H.: (7.00) Charge press. hPa : -1/min : 500 Speed Del.quantity cm3/: 85.5...87.5 1000H.: (83.5...89.5)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : IHC 7,6 R 7
Edition : 09.03.87
Superceeded : 11.85
Calibrating oil : ISO-4113

Combination nc. : 0 403 446 161

Injection pump

Pump designation : PES6MW100/320RS1134

EP type number : 0 413 406 125

Governor

Governor design.: RQV350...1200MW46-1

Governer no. : 0 420 083 091

Customer-spec. information Customer : NAVI-STAR

Engine : DTA-466C

1st version kW : 172.0 Speed 1/min: 2400

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

111 CC Cemp. 0 . 50:::42

Overflow valve

: 2 417 413 037

Inlet press., bar: 2.80

Calibrating nozzle-holder

assembly : 1 688 90° 916

Opening

pressure, bar : 207...210

Test inj. tubing : 1 680 750 008

Outside diameter

x Wall thickness

x Length mm : 6.00x2.00x600

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values ____

bei agraes ____

START OF DELIVERY Test pressure, bar: 30...32

Prestroke mm : 2.95...3.05 : (2.90...3.10)

Contr.-rod trav.mm: 9.00...12.00

Setting point w/out aux. spring Speed 1/min: 350 Cam sequence : 1- 5- 3- 6- 2- 4 Contr.-rod trav.mm: 6.5...6.6 SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Testing: 1/min : 100 Speed C-rod trav.mm min: 9.00 1/min : 350 BASIC SETTING Speed C-rod trav.mm : 6.50...6.60 1/mi: 800 1st speed CONSTANT REGULATION Contr.-rod trav.mm: 12.80...12.90 1/min : 370...500 Speed Del.quantity cm3/: 12.1...12.3 compensator (LDA,ADA,ALDA) 100H.: (11.9...12.5) 1st version cm3/: 0.35Setting Dispersion Speed 1/min : 500 hPa : 240 100H.: (0.6) Pressure Contr.-rod trav.mm: 10.40...10.50 1/min: 350.0 2nd speed Contr.-rod trav. m: 6.5...6.6 Measurement Del.quantity cm3/: 1.8...2.2 1/min : 500 Speed 100H.: (1.5...2.4) cm3/: 0.35 100H.: (0.5) Dispersion -1st pressure hPa : C-rod trav.mm : 9.80...9.90 2nd pressure hPa : 520 C-rod trav.mm : 11.90...12.20 3rd pressure hPa : 800_ SLEEVE POSITION Control-lever position Degree: -1 1/min: 1380 C-rod trav.mm : 12.80...12.90 Speed Cont.-rod travelmm: 6.70...9.30 SWITCH-OVER POINT 1/min : 280 (290) Speed FULL-LOAD DELIV. AT FULL-LOAD STOP FUEL-DELIVERY CHARACTERISTICS 1st version Speed 1/min: 800 1st version Charge press. hPa: 800 Charge press. hPa: 800 Del.quantity cm3/: 121.5...123.5 1000H.: (119.5...125.5) Dispersion cm3/: 3.50 1000H.: (6.00) 1/min : 1200 Speed Del.quantity cm3/: 124.5...128.5 1000H.: (122.5...130.5) cm3/: 6.50 Dispersion 1000H.: (7.00) Charge press. hPa: -Speed 1/min: 500 Del.quantity cm3/: 65.5...67.5 1000H.: (63.5...69.5) HIGHEST RATED SPEED 1st version Control-lever position degrees: 45...50 Testing: 1st c-rod trav.mm : 11.80 Speed 1/min: 1250...1260 2nd c-rod trav.mm : 4.00 Remarks: 1/min : 1395...1405 1/min : 1460 Speed 4th speed C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 9...17

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                         : 1-5-3-6-2-4
                                                      Cam sequence
Note inst. in remarks column
Test sheet
                                                      SD ang. spacing ^{0}CS: 0-60-120-180-240-300 Tolerance + - ^{0}: 0.50 (0.75)
                    : IHC 7,6 R 9
                    : 12.09.86
Edition
Superceeded
Calibrating oil : ISO-4113
                                                      BASIC SETTING
Combination no.
                    : 0 403 446 172
                                                      1st speed
                                                                   1/mi: 900
                                                      Contr.-rod trav.mm: 11.60...11.70
Injection pump
Pump designation : PES6MW100/320RS1134
EP type number
                    : 0 413 406 125
                                                      Del.quantity cm3/: 10.8...11.0
Governor
Governor design.
                    : RQV350...1300MW46-5
                                                                    100H.: (10.6...11.2)
Governer no.
                    : 0 420 083 105
                                                      Dispersion
                                                                    cm3/:0.35
Customer-spec. information
                                                                    100H.: (0.6)
Customer
                   : NAVI-STAR
Engine
                    : DTI-466C
                                                      2nd speed
                                                                    1/min: 350.0
                                                      Contr.-rod trav. m: 6.1... 6.2
                                                      Del.quantity cm3/: 1.8...2.2
1st version kW : 156.0
                                                                    100H.: (1.5...2.4) cm3/: 0.35
              1/min: 2600
Speed
                                                      Dispersion
                                                                    100H.: (0.5)
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. <sup>D</sup>C
                                                      SLEEVE POSITION
                    : 38...42
                                                      Control-lever position
                                                                   Degree: -1
1/min: 1355
Overflow valve
                                                      Speed
                    : 2 417 413 037
                                                      Cont.-rod travelmm: 8.00...0.00
                                                      FULL-LOAD DELIV, AT FULL-LOAD STOP
Inlet press., bar : 2.80
Calibrating nozzle-holder
                                                      1st version
 assembly
                  : 1 688 901 016
                                                                    1/min: 900
                                                      Speed
                                                      Charge press. hPa: 800
Del.quantity cm3/: 108.5...110.5
Opening.
                                                                   1000H:: (106.5...112.5)
cm3/: 3.50
 pressure, bar : 207...210
                                                      Dispersion
                                                                   1000H.: (6.00)
Test inj. tubing : 1 680 750 008
                                                      HIGHEST RATED SPEED
Outside diameter
                                                      1st version
                                                      Control-lever
x Wall thickness
                   : 6.00x2.00x600
                                                       position degrees: 46...51
x Length mm
                                                      Testing:
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                      1st c-rod trav.mm: 10.60
                                                      Speed 1/min: 1345...1365
2nd c-rod trav.mm: 4.00
    per values ____
                                                      Speed 1/min: 1455...1465
3rd c-rod trav.mm: 0.00...1.00
START OF DELIVERY
Test pressure, bar: 30...32
                                                                   1/min : 1575
                                                        Speed
Prestroke mm
                    : 2.95...3.05
                                                      LOWEST RATED SPEED I
                    : (2.90...3.10)
                                                      Control-lever
Contr.-rod trav.mm: 9.00...12.00
                                                       position degrees: 10...18
```

Setting point w/out aux. spring Speed 1/min : 350 Contr.-rod trav.mm: 6.1...6.2 Testing: Speed 1/min : 100 C-rod trav.mm min : 9.00 CONSTANT REGULATION 1/min: 360...540 Speed compensator (LDA, ADA, ALDA) 1st version Setting 1/min : 500 Speed Pressure hPa : 280 Contr.-rod trav.mm: 9.5...9.6 Measurement 1/min : 500 Speed 1st pressure hPa : 800 G-rod trav.mm : 11.60...11.70 2nd pressure hPa : -: 8.80...8.90 C-rod trav.mm 3rd pressure hPa : 620 C-rod trav.mm : 10.90...11.00 SWITCH-OVER POINT 1/min: 220-280 Speed FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa: 800 1/min : 1300 Speed Del.quantity cm3/: 114.0...118.0 1000H.: (112.0...120.0) cm3/: 6.50 1000H.: (7.00) Dispersion Charge press. hPa : -1/min: 500 Speed Del.quantity cm3/: 55.0...57.0 1000H.: (53.0...59.0) Remarks:

```
Cam sequence : 1-5- 3- 6- 2- 4
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
                                                        SD ang. spacing ^{0}CS: 0-60-120-180-240-300 Tolerance + - ^{0}: 0.50 (0.75)
Test sheet
                    : IHC 7,6 R12
: 17.12.86
Edition
Superceeded
Calibrating oil : ISO-4113
                                                        BASIC SETTING
Combination no.
                    : 0 403 446 176
                                                        1st speed
                                                                        1/mi: 800
                                                        Contr.-rod trav.mm: 11.00...11.10
Injection pump
Pump designation : PES6MW100/320RS1140
EP type number
                                                        Del.quantity cm3/: 8.6...8.8
                    : 0 413 406 135
Governor
                                                                       100H.: (8.4...9.0)
Governor design. : RQV350...1200MW72
                    : 0 420 083 109
Governer no.
                                                                       cm3/:0.35
                                                        Dispersion
Customer-spec. information
                                                                       100H.: (0.6)
Customer
                    : NAVI-STAR
                                                        2nd speed 1/min: 350.0

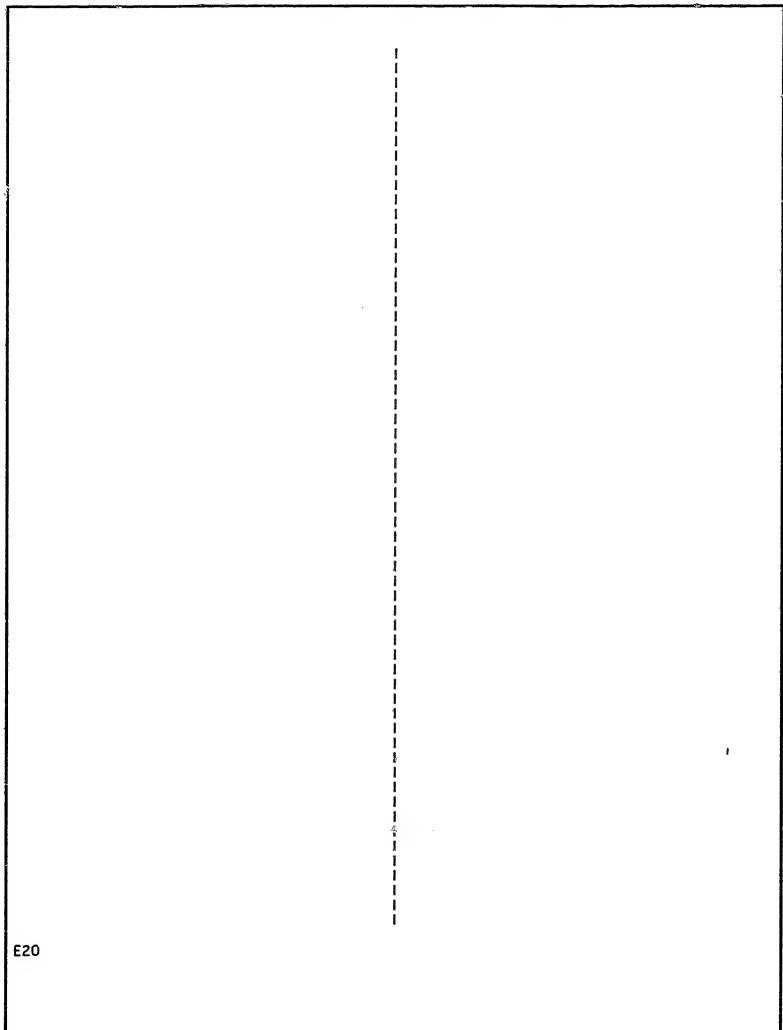
Contr.-rod trav. m: 6.4...6.5

Del.quantity cm3/: 1.6...2.0

100H.: (1.3...2.2)

Dispersion cm3/: 0.35
Engine
                    : DT-466 C
1st version kW : 123.0
Speed
              1/min: 2400
                                                                       100H.: (0.5)
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. <sup>D</sup>C
                                                        (B) Setting of injection pump with
                                                             externally-mounted governor
                    : 38...42
                                                        SLEEVE TRAVELS
Overflow valve
                     : 2 417 413 037
                                                        1st speed 1/min: 1250
                                                          Sleeve travel mm: 7.80...8.00
                                                        2nd speed 1/min: 1340
Inlet press., bar : 2.80
                                                          Sleeve travel mm: 8.80...9.20
                                                        3rd speed 1/min: 500
Sleeve travel mm: 2.60...3.20
4th speed 1/min: 350
Sleeve travel mm: 1.30...1.80
Calibrating nozzle-holder
 assembly
                   : 1 688 901 016
Opening
pressure, bar
                    : 207...210
                                                        SLEEVE POSITION
                                                        Control-lever position
                                                                      Degree: -1
Test inj. tubing
                    : 1 680 750 008
                                                                       17min: 1380
                                                        Speed
                                                        Cont.-rod travelmm: 6.60...9.40
Outside diameter
x Wall thickness
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
                    : 6.00x2.00x600
x Length mm
(A) Injection pump setting values
                                                        1st version
    Insp. values in parentheses
Set constant delivery quant.
                                                                       1/min: 800
                                                        Speed
                                                        Del.quantity cm3/: 86.0...88.0
    per values
                                                                      1000H.: (84.0...90.0) cm3/ : 3.50
                                                        Dispersion
START OF DELIVERY
                                                                      1000H.: (6.00)
Test pressure, bar: 30...32
                                                        HIGHEST RATED SPEED
Prestroke mm
                     : 3.95...4.05
                                                        1st version
                    : (3.90...4.10)
                                                        Control-lever
Contr.-rod trav.mm: 9.00...12.00
                                                         position degrees: 46...51
```

Testing: 1st c-rod trav.mm : 10.00 Speed 1/min : 1240...1260 2nd c-rod trav.mm : 4.00 1/min : 1350...1360 1/min : 1450 Speed 4th speed C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 10...18
Setting point w/out aux. spring
Speed 1/min: 350 Contr.-rod trav.mm: 6.4...6.5 Testing: 1/min : 100 Speed C-rod trav.mm min : 9.00 1/min : 350 Speed C-rod trav.mm : 6.40...6.50 CONSTANT REGULATION 1/min : 370...450 Speed SWITCH-OVER POINT Speed 1/min : 280 (290) FUEL-DELIVERY CHARACTERISTICS Speed 1/min: 1200 Del.quantity cm3/: 89.0...93.0 1000H: (87.0...95.0) cm3/:6.50Dispersion 1000H.: (7.00)



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BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                           : 1-5-3-6-2-4
                                                       Cam sequence
Note inst. in remarks column
Test sheet
                                                       SD ang. spacing ^{\circ} CS: 0-60-120-180-240-300 Tolerance + - ^{\circ} : 0.50 (0.75)
                    : MB 6.0 D 19
: 07.01.87
Edition
Superceeded
                    : 28.11.86
Calibrating oil : ISO-4113
                                                       BASIC SETTING
Combination no.
                    : 0 403 446 184
                                                                    1/mi: 1300
                                                       1st speed
Injection pump
                                                       Contr.-rod trav.mm: 10.90...11.00
Pump designation : PES6MW100/720RS1139
EP type number
                    : 0 413 406 138
                                                       Del.quantity cm3/: 8.0...8.2
Governor
Governor design.
Governer no.
                    : RQV300...1300MW48-3
: 0 420 083 121
                                                                      100H.: (7.8...8.4)
                                                       Dispersion
                                                                      cm3/:0.35
Customer-spec. information
Customer
                    : DB
                                                                      100H.: (0.6)
                                                       2nd speed 1/min: 300.0
Contr.-rod trav. m: 7.8...7.9
Del.quantity cm3/: 1.0...1.4
100H.: (0.9...1.5)
Engine
                    : 0M366A
1st version kW : 125.0
Speed
               1/min: 2600
                                                                      cm3/: 0.35
100H.: (0.5)
                                                       Dispersion
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. C
                                                       (B) Setting of injection pump with
                    : 38...42
                                                            externally-mounted governor
Overflow valve
                                                       SLEEVE TRAVELS
                                                       1st speed 1/min: 1340
Sleeve travel mm: 8.50...8.70
                     : 1 417 413 000
Inlet press., bar : 1.50
                                                       2nd speed
                                                                     1/min: 1450
                                                         Sleeve travel mm: 9.30...9.70
                                                       3rd speed 1/min: 500
Calibrating nozzle-holder
 assembly
                   : 0 681 343 009
                                                         Sleeve travel mm: 2.70...3.30
                                                       4th speed 1/min: 300
Opening
                                                         Sleeve travel mm: 1.20...1.70
 pressure, bar : 172...175
                                                       SLEEVE POSITION
                                                       Control-lever position
Test inj. tubing : 1 680 750 008
                                                                    Degree: -1
1/min: 1350
                                                       Speed
Outside diameter
                                                       Cont.-rod travelmm: 15.20...17.80
x Wall thickness
x Length mm
                    : 6.00x2.00x600
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
(A) Injection pump setting values
                                                       1st version
    Insp. values in parentheses
Set constant delivery quant.
                                                       Speed
                                                                      1/min: 1300
                                                       Del.quantity cm3/: 80.0...82.0
    per values ____
                                                                     1000H.: (78.0...84.0)
                                                                     cm3/ : 3.50
                                                       Dispersion
START OF DELIVERY
                                                                     1000H.: (6.00)
Test pressure, bar: 30...32
                                                       HIGHEST RATED SPEED
Prestroke mm
                    : 3.70...3.80
                                                       1st version
                    : (3.65...3.85)
                                                       Control-lever
Contr.-rod trav.mm: 19.00...25.00
                                                        position degrees: 50...58
E21
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```
Testing:
1st c-rod trav.mm : 9.90
  Speed 1/min: 1340...1350
2nd c-rod trav.mm : 4.00
             1/min : 1425...1455
1/min : 1550
  Speed
4th speed
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 18...26
Setting point w/out aux. spring
Speed 1/min: 300
Contr.-rod trav.mm: 7.8...7.9
Testing:
Speed
              1/min : 100
C-rod trav.mm min : 9.30
             1/min : 300
Speed
                     : 7.80...7.90
C-rod trav.mm
CONSTANT REGULATION
              1/min : 330...500
Speed
TORQUE CONTROL
Torque-control curve - 1st version
            1/min : 1300
1st speed
  C-rod trav.mm : 10.90...11.00
             1/min : 800
2nd speed
  C-rod trav.mm : 11.60,...11.80
3rd speed 1/min: 585
  C-rod trav.mm : 11.80...12.00
SWITCH-GVER POINT
              1/min : 230 (250)
Speed
FUEL-DELIVERY CHARACTERISTICS
              1/min : 800
Speed
Del.quantity cm3/: 77.5...79.5
1000H.: (75.5..81.5)
Dispersion cm3/: 5.00
1000H.: (7.00)
Speed 1/min: 585
Pel, quantity cm3/: 75.0..77.0
1000H.: (73.0...79.0)
```

```
: 1-5-3-6-2-4
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                         Cam sequence
Note inst. in remarks column
Test sheet
                                                         SD ang. spacing ^{\circ} CS: 0-60-120-180-240-300 Tolerance + - ^{\circ} : 0.50 (0.75)
                     : MB 6.0 D 19
: 07.01.87
Edition
Superceeded
                    : 28,11.86
Calibrating oil : ISO-4113
                                                         BASIC SETTING
Combination no.
                     : 0 403 446 184
                                                         1st speed
                                                                         1/mi: 1300
                                                         Contr.-rod trav.mm: 10.90...11.00
Injection pump
Pump designation : PES6MW100/720RS1139
                                                         Del.quantity cm3/: 8.0...8.2
EP type number
                     : 0 413 406 138
Governor
Governor design.: RQV300...1300MW48-3
                                                                        100H.: (7.8...8.4)
Governer no.
                     : 0 420 083 121
                                                         Dispersion
                                                                        cm3/: 0.35
Customer-spec. information
                                                                        100H.: (0.6)
Customer
                    : DB
                                                        2nd speed 1/min: 300.0
Contr.-rod trav. m: 7.8...7.9
Del.quantity cm3/: 1.0...1.4
100H.: (0.9...1.5)
                     : 0M366A
Engine
1st version kW : 125.0
Speed
               1/min: 2600
                                                                        cm3/: 0.35
100H.: (0.5)
                                                         Dispersion
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                                                         (B) Setting of injection pump with
                     : 38...42
                                                             externally-mounted governor
Overflow valve
                                                         SLEEVÉ TRAVELS
                                                         1st speed 1/min: 1340
Sleeve travel mm: 8.50...8.70
                     : 1 417 413 000
Inlet press., bar: 1.50
                                                         2nd speed
                                                                      1/min: 1450
                                                           Sleeve travel mm: 9.30...9.70
                                                         3rd speed 1/min: 500
Calibrating nozzle-holder
                                                         Steeve travel mm: 2.70...3.30
4th speed 1/min: 300
Steeve travel mm: 1.20...1.70
                   : 0 681 343 009
 assembly
Opening.
 pressure, bar : 172...175
                                                         SLEEVE POSITION
                                                         Control-lever position
Test inj. tubing : 1 680 750 008
                                                                      Degree: -1
                                                                        17min: 1350
                                                         Speed
                                                         Cont.-rod travelmm: 15.20...17.80
Outside diameter
x Wall thickness
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
                   : 6.00X2.00X600
x Length mm
(A) Injection pump setting values
                                                         1st version
    Insp. values in parentheses
Set constant delivery quant.
                                                                        1/min: 1300
                                                         Speed
                                                        Del.quantity cm3/: 80.0...82.0
1000H: (78.0...84.0)
Dispersion cm3/: 3.50
    per values ____
                                                                      1000H.: (6.00)
START OF DELIVERY
Test pressure, bar: 30...32
                                                        HIGHEST RATED SPEED
Prestroke mm
                     : 3.70...3.80
                                                        1st version
                     : (3.65...3.85)
                                                        Control-lever
Contr.-rod trav.mm: 19.00...21.00
                                                         position degrees: 50...58
E23
```

```
Testing:
1st c-rod trav.mm: 9.90
             1/min: 1340...1350
  Speed
2nd c-rod trav.mm: 4.00
              1/min: 1425...1455
  Speed
4th speed
              1/min : 1550
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 18...26
Setting point w/out aux. spring
             1/min : 300
Contr.-rod trav.mm: 7.8...7.9
Testing:
              1/min : 100
Speed
Speed 1/min: 300
Speed 1/min: 300
C-rod trav.mm : 7.80...7.90
CONSTANT REGULATION
              1/min : 330 ... 500
Speed
TORQUE CONTROL
Torque-control curve - 1st version
  t speed 1/min : 1300
C-rod trav.mm : 10.90...11.00
1st speed
              1/min: 800
2nd speed
  C-rod trav.mm : 11.60...11.80
3rd speed 1/min : 585
  C-rod trav.mm
                    : 11.80...12.00
SWITCH-OVER POINT
Speed
              1/min : 230 (250)
FUEL-DELIVERY CHARACTERISTICS
              1/min: 800
Speed
Del.quantity cm3/: 77.5...79.5
              1000H.: (75.5...81.5)
Dispersion cm3/: 5.00
1000H.: (7.00)
Speed 1/min: 585
Del.quantity cm3/: 75.0...77.0
              1000H.: (73.0...79.0)
```

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                        : 1-5-3-6-2-4
                                                     Cam sequence
Note inst. in remarks column
Test sheet
                                                     SD ang. spacing ^{0}CS: 0-60-120-180-240-300 Tolerance + - ^{0}: 0.50 (0.75)
                   : IHC 7,6 R15
Edition
                   : 10.12.86
Superceeded
Calibrating oil : ISO-4113
                                                     BASIC SETTING
Combination no.
                   : 0 403 446 185
                                                     1st speed
                                                                   1/mi: 800
Injection pump
                                                     Contr.-rod trav.mm: 11.40...11.50
Pump designation : PES6MW100/320RS1140
EP type number
                   : 0 413 406 135
                                                     Del.quantity cm3/: 9.1...9.3
Governor
Governor design. : RQV350...1200MW72-1
                                                                   100H.: (8.9...9.5)
Governer no.
                   : 0 420 083 122
                                                     Dispersion
                                                                   cm3/:0.35
Customer-spec. information
                                                                   100H.: (0.6)
Customer
                   : NAVISTAR
                   : DT-466 C
                                                                   1/min: 350.0
Engine
                                                     2nd speed
                                                     Contr.-rod trav. m: 6.6...6.7
1st version kW : 134.0
                                                     Del.quantity cm3/: 1.6...2.0
                                                                   100H.: (1.3...2.2)
              1/min: 2400
Speed
                                                                   cm3/: 0.35
100H.: (0.5)
                                                     Dispersion
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. C
                                                     (B) Setting of injection pump with
                   : 38...42
                                                         externally-mounted governor
Overflow valve
                                                     SLEEVE TRAVELS
                   : 2 417 413 037
                                                     1st speed 1/min: 1250
                                                       Sleeve travel mm: 7.80...8.00
                                                     2nd speed 1/min: 1340
Inlet press., bar : 2.80
                                                       Sleeve travel mm: 8.80...9.20
                                                     3rd speed 1/min: 500
Sleeve travel mm: 2.60...3.20
4th speed 1/min: 350
Calibrating nozzle-holder
                  : 1 688 901 016
 assembly
                                                       Sleeve travel mm: 1.30...1.80
Opening
pressure, bar : 207...210
                                                     SLEEVE POSITION
                                                     Control-lever position
Test inj. tubing : 1 680 750 008
                                                                 Degree: -1
                                                                  17min: 1380
                                                     Speed
                                                     Cont.-rod travelmm: 6.70...9.30
Outside diameter
x Wall thickness
                                                    FULL-LOAD DELIV. AT FULL-LOAD STOP
x Length mm
               : 6.00x2.00x600
(A) Injection pump setting values
                                                     1st version
    Insp. values in parentheses
                                                                  1/min: 800
                                                     Speed
                                                     Charge press. hPa: 700
    Set constant delivery quant.
                                                    Del.quantity cm3/: 91.5...93.5
1000H.: (89.5...95.5)
Dispersion cm3/: 3.50
1000H.: (6.00)
    per values ____
START OF DELIVERY
Test pressure, bar: 30...32
                   : 3.95...4.05
                                                    HIGHEST RATED SPEED
Prestroke mm
                   : (3.90...4.10)
                                                    1st version
Contr.-rod trav.mm: 9.00...12.00
```

Control-lever position degrees: 42...47 Testing: 1st c-rod trav.mm : 10.40 Speed 1/min : 1250...1270 2nd c-rod trav.mm : 4.00 Speed 1/min: 1360...1370 4th speed 1/min: 1450 C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 10...18 Setting point w/out aux. spring 1/min : 350 Contr.-rod trav.mm: 6.6...6.7 Testing: 1/min : 100 Speed C-rod trav.mm min : 9.00 1/min : 350 Speed : 6.60...6.70 C-rod trav.mm CONSTANT REGULATION Speed 1/min: 370...500 SWITCH-OVER POINT 1/min : 280 (290) Speed FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 700 1/min : 1200 Del.quantity cm3/: 94.0...98.0 1000H.: (92.0...100.0) cm3/: 6.50 1000H.: (7.00) Dispersion Perform pump setting only with IH hose with restriction of 1.2 mm diameter. In unlatched condition, do not operate greater than n = 500 1/min

Set shuto#f stop 1.5...2.0 mm before shutoff.

Set low idle at stop screw.

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                         : 1-5-3-6-2-4
                                                      Cam sequence
Note inst. in remarks column
Test sheet
                                                      SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                    : KHD 6,1 N 7
Edition
                    : 09.03.87
Superceeded
Calibrating oil : ISO-4113
                                                      BASIC SETTING
Combination no.
                   : 0 403 446 186
                                                      1st speed
                                                                    1/mi: 1325
                                                      Contr.-rod trav.mm: 10.50...10.60
Injection pump
Pump designation : PES6MW100/720RS1133
EP type number
                    : 0 413 406 126
                                                      Del.quantity cm3/: 10.1...10.3
Governor
Governor design. : RQV325...1325MW29
                                                                    100H.: (9.9...10.5)
Governer no.
                    : 0 420 083 0123
                                                      Dispersion
                                                                    cm3/: 0.35
Customer-spec. information
Customer
                                                                    100H.: (0.6)
                   : KHD
Engine
                    : BF 6L 913
                                                      2nd speed
                                                                    1/min: 325.0
                                                      Contr.-rod trav. m: 6.8...6.9
                                                      Del.quantity cm3/: 1.1...1.5
100H.: (0.9...1.7)
1st version ky : 124.0
              1/min: 2650
Speed
                                                                    cm3/ : 0.35
                                                      Dispersion
TEST BENCH REQUIREMENTS
                                                                    100H.: (0.5)
Calibrating-oil inlet temp. C
                                                      (B) Setting of injection pump with
                    : 38...42
                                                          externally-mounted governor
Overflow valve
                                                      SLEEVE TRAVELS
                    : 1 417 413 000
                                                      1st speed 1/min: 1375
                                                        Sleeve travel mm: 8.70...8.90
                                                      2nd speed 1/min: 1430
Inlet press., bar: 1.50
                                                        Sleeve travel mm: 9.50...9.90
                                                      3rd speed 1/min: 325
Sleeve travel mm: 1.50...1.90
Calibrating nozzle-holder
                   : 0 681 343 009
 assembly
                                                      4th speed 1/min: 600
Opening
                                                        Sleeve travel mm: 2.70...3.30
pressure, bar : 172...175
                                                      SLEEVE POSITION
                                                      Control-lever position
                                                      Degree: -1
Speed 1/min: 1400
Cont.-rod travelmm: 15.20...17.80
Test inj. tubing : 1 680 750 014
Outside diameter
x Wall thickness
                                                      FULL-LOAD DELIV. AT FULL-LOAD STOP
                   : 6.00x2.00x600
x Length mm
(A) Injection pump setting values
                                                      1st version
    Insp. values in parentheses
Set constant delivery quant.
                                                                    1/min: 1325
                                                      Speed
                                                     Charge press. hPa: 900
Del.quantity cm3/: 101.0...103.0
1000H: (99.0...105.0)
Dispersion cm3/: 3.50
    per values
START OF DELIVERY
                                                                   1000H.: (6.00)
Test pressure, bar: 30...32
Prestroke mm
                    : 3.50...3.60
                                                      HIGHEST RATED SPEED
                    : (3.45...3.65)
                                                      1st version
Contr.-rod trav.mm: 9.00...12.00
E27
```

Control-lever position degrees: 50...58 Testing: 1st c-rod trav.mm : 9.50 Speed 1/min: 1370...1380 2nd c-rod trav.mm : 4.00 Speed 1/min : 1445...1475 4th speed 1/min: 1550 C-rod trav.mm : 0.10...1.00 LOWEST RATED SPEED I Control-lever position degrees: 17...25 Setting point w/out aux. spring 1/min : 325 Contr.-rod trav.mm: 6.8...6.9 Testing: Speed 1/min : 100 C-rod trav.mm min: 8.60 Speed 1/min: 325 C-rod trav.mm : 6.80...6.90 CONSTANT REGULATION 1/min : 350...650 Speed compensator (LDA, ADA, ALDA) 1st version Setting 1/min : 500 Speed hPa : 450 Pressure Contr.-rod trav.mm: 10.20...10.00 Measurement 1/min: 500 Speed 1st pressure hPa : -: 8.90...10.00 C-rod trav.mm 2nd pressure hPa : 450 C-rod trav.mm : 10.20...10.00 3rd pressure hPa : 900 C-rod trav.mm : 10.50...10.60 SWITCH-OVER POINT 1/min : 245 (255) Speed FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa: 900 1/min: 850 Speed Del.quantity cm3/: 93.0...97.0 1000H.: (91.0...99.0) cm3/: 3.50 1000H.: (7.00) Dispersion Charge press. hPa : -1/min : 500 Speed

E28

Del.quantity cm3/: 57.0...59.0 1000H.: (55.0...61.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

: MB 6.0 D 21 : 09.03.87 Test sheet Edition

Superceeded

Calibrating oil : ISO-4113

Combination no. : 0 403 446 187

Injection pump

Pump designation : PES6MW100/720RS1129

EP type number : 0 413 406 121

Governor

Governor design. : RQV300...1300MW50-2

: 0 420 083 124 Governer no.

Customer-spec. information

Customer : DB

Engine : OM 366 LA

1st version kW : 150.0 1/min: 2600 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 000

Inlet press., bar : 1.50

Calibrating nozzle-holder

: 0 681 343 009 assembly

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 008

Outside diameter

x Wall thickness

: 6.00X2.00X600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant.

per values _____

START OF DELIVERY

Test pressure, bar: 30...32

: 3.70...3.80 Prestroke mm

: (3.65...3.85)

Contr.-rod trav.mm: 9.00...12.00

Cam sequence : 1- 5- 3- 6- 2- 4 Control-lever position degrees: 48...56 Testing: SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - 0.50 (0.75) 1st c-rod trav.mm : 12.20 Speed 1/min : 1340...1350 2nd c-rod trav.mm: 4.00 Speed 1/min: 1460...1490 4th speed 1/min: 1550 BASIC SETTING 1st speed 1/mi: 1300 C-rod trav.mm : 0.00...1.00 Contr.-rod trav.mm: 13.20...13.30 LOWEST RATED SPEED I Control-lever Del.quantity cm3/: 8.9...9.1 position degrees: 11...19 Setting point w/out aux. spring Speed 1/min: 300 100H.: (9.1...9.7) Contr.-rod trav.mm: 4.85 Dispersion cm3/:0.35Testing: 100H.: (0.6) Speed 1/min : 100 C-rod trav.mm min : 7.00 2nd speed 1/min: 300.0 Contr.-rod trav. m: 4.8...4.9 Del.quantity cm3/: 1.0...1.2 100H.: (0.8...1.6) Dispersion cm3/: 0.35 Speed 1/min: 300 C-rod trav.mm: 4.80...4.90 SET IDLE AUXILIARY SPRING Contr.-rod trav.mm: 2.00 100H.: (0.5) CONSTANT REGULATION (B) Setting of injection pump with externally-mounted governor Speed 1/min: 320...530 compensator (LDA, ADA, ALDA) SLEEVE TRAVELS 1st speed 1/min: 1340 Sleeve travel mm: 8.60...8.80 1st version 2nd speed 1/min: 1430 Setting 1/min : 500 Sleeve travel mm: 9.30...9.70 Speed 3rd speed 1/min: 300 Pressure hPa : 400 Sleeve travel mm: 1.20...1.60
4th speed 1/min: 700
Sleeve travel mm: 3.80...4.40 Contr.-rod trav.mm: 11.70...11.80 Measurement Speed 1/min : 500 SLEEVE POSITION Control-lever position 1st pressure hPa : -C-rod trav.mm : 11.20...11.30 Degree: -1 17min: 1340 2nd pressure hPa : 500 Speed C-rod trav.mm : 12.60...12.90 3rd pressure hPa : 700 Cont.-rod travelmm: 15.20...17.80 C-rod trav.mm : 13.20...13.30 FULL-LOAD DELIV. AT FULL-LOAD STOP SWITCH-OVER POINT 1st version 1/min: 1300 Speed 1/min : 220 (230) Speed Charge press. hPa: 700
Del.quantity cm3/: 89.0...91.0
1000H: (91.0...97.0)
Dispersion cm3/: 3.50
1000H: (6.00) FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 700 Speed 1/min : 700 Del.quantity cm3/ : 85.5...89.5 1000H.: (83.5...91.5) HIGHEST RATED SPEED 1st version

cm3/: 5.00 1000H.: (7.00) Dispersión Charge press. hPa: Speed 1/min: 500
Del.quantity cm3/: 53.0...55.0
1000H.: (51.0...57.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet Edition Superceeded : PER 10,0 R : 05.11.86 : 3.83 Calibrating oil : ISO-4113

Combination no. : 0 403 448 118

Injection pump

Pump designation : PES8MW100/720RS1106

EP type number : 0 413 408 008

Governor

Governor design. : RQV275...1125MW40

Governer no. : 0 420 083 043

Customer-spec information Customer : PERKINS

: V8.640GR Engine

1st version kW : 147.0 1/min: 2250 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 417 413 000

Inlet press., bar: 1.50

Calibrating nozzle-holder

: 0 681 343 009 assembly

Opening

pressure, bar : 173...176

Test inj. tubing : 1 680 750 014

Outside diameter x Wall thickness

: 6.00x2.00x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

START OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.00...3.10 : (2.95...3.15)

Contr.-rod trav.mm: 9.00...12.00

: 1-8-7-5-4-3-Cam sequence 6- 2 SD ang. spacing CS: 0-45-90-135-180-225-270-315 Tolerance + - 0 : 0.50 (0.75) SD mark cyl. no. : 1 BASIC SETTING 1/mi: 800 1st speed Contr.-rod trav.mm: 13.40...13.50 Del.quantity cm3/: 9.0...9.2 100H.: (8.8...9.4) Dispersion cm3/: 0.35100H.: (0.6) 1/min: 275.0 2nd speed Contr.-rod trav. m: 8.8...8.9

Del.quantity cm3/: 1.3...1.7

100H.: (1.1...2.0)

Dispersion cm3/: 0.35 100H.: (0.5) SLEEVE POSITION Control-lever position Degree: -1 17min: 1190 Speed Cont.-rod travelmm: 15.20...17.80 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version Speed 1/min: 800 Del.quantity cm3/: 90.5...92.5 1000H.: (88.5...94.5) Dispersion cm3/: 3.50 1000H.: (6.00) HIGHEST RATED SPEED 1st version Control-lever position degrees: 60...68 Testing: 1st c-rod trav.mm : 12.40 Speed 1/min : 1175...1185 2nd c-rod trav.mm: 4.00 1/min: 1260...1290 Speed 4th speed 1/min: 1350

C-rod trav.mm : 0.00...1.00

LOWEST RATED SPEED I

Control-lever

position degrees: 13...21
Setting point w/out aux. spring

Speed 1/min: 275 Contr.-rod trav.mm: 8.85

Testing:

Speed 1/min: 100 C-rod trav.mm min: 10.30 Speed 1/min: 275

C-rod trav.mm : 8.80...8.90

CONSTANT REGULATION

Speed 1/min: 300...500

SWITCH-OVER POINT

Speed 1/min: 195 (215)

Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1-5- 3- 6- 2- 4 BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : RVI 5.5 A 1 : 12.09.86 SD ang. spacing CS: 0-60-120-180-240-300Tolerance + - 0.50 (0.75) Edition Superceeded Calibrating oil : ISO-4113 BASIC SETTING : 0 403 476 013 Combination no. 1/mi: 900 1st speed Injection pump Pump designation : PES6MW80/320RS1104 Del.quantity cm3/: 5.2...5.4 EP type number : 0 413 486 002 100H.: (5.0...5.6) Governor : RSV300...1450MW0A801 Governor design. cm3/: 0.25-1 Dispersion Governer no. : 0 420 085 067 100H.: (0.4) Customer-spec. information 2nd speed 1/min: 300.0 Contr.-rod trav. m: 4.5...4.6 Del.quantity cm3/: 1.2...1.5 100H.: (1.1...1.7) Dispersion cm3/: 0.2 100H.: (0.3) Customer : RVI : MD060212 Engine 1st version kW : 97.8 Speed 1/min: 2900 TEST BENCH REQUIREMENTS SLEEVE POSITION Control-lever position Degree: -3 Calibrating-oil inlet temp. °C 1/min: 800 : 38...42 Cont.-rod travelmm: 0.30...1.00 Overflow valve FULL-LOAD DELIV. AT FULL-LOAD STOP : 2 417 413 028 Inlet press., bar: 2.50 1st version Speed 1/min: 900 Del.quantity cm3/: 52.5...54.5 1000H:: (50.5...56.5) Dispersion cm3/: 2.50 1000H:: (4.00) Calibrating nozzle-holder : 0 681 343 009 assembly Opening pressure, bar : 173...176 HIGHEST RATED SPEED 1st version Test inj. tubing : 1 680 750 014 Control-lever position degrees: 56...64 Outside diameter x Wall thickness Testing: 1st c-rod trav.mm : -2.00 Speed 1/min : 1520...1530 x Length mm : 6.00x2.00x600 2nd c-rod trav.mm: -7.20 (A) Injection pump setting values Insp. values in parentheses Speed 1/min: 1615...1645 Set constant delivery quant. 3rd c-rod trav.mm : -9.50..-10.4 1/min: 1700 per values ____ Speed LOWEST RATED SPEED I START OF DELIVERY Control-lever Test pressure, bar: 30...32 position degrees: 29...37 Prestroke mm : 1.75...1.85 : (1.70...1.90) Setting point w/out aux. spring Speed 1/min : 300

F07

Contr.-rod trav.mm: -4.55 Testing: 1/min : 250 Speed C-rod trav.mm min : -3.2 Speed 1/min : 300 : -4.5...-4.6 C-rod trav.mm TORQUE CONTROL Torque-control curve - 1st version 1/min : 900 1/min : 1450 1st speed 2nd speed C-rod trav.mm : -0.90...-1.00 3rd speed 1/min: 1100 C-rod trav.mm : -0.50...-0.70 FUEL-DELIVERY CHARACTERISTICS Speed 1/min 1450
Del.quantity cm3/: 54.5...56.5
1000H.: (52.5...58.5)
Dispersion cm3/: 3.50
1000H.: (4.50)

```
Cam sequence : 1-5- 3- 6- 2- 4
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
Test sheet
                                                        SD ang. spacing ^{0}CS: 0-60-120-180-240-300 Tolerance + - ^{0}: 0.50 (0.75)
                    : MB 6,0 D 22
                    : 10.12.86
Edition
Superceeded
Calibrating oil : ISO-4113
                                                        BASIC SETTING
                    : 0 403 476 027
Combination no.
                                                                        1/mi: 1300
                                                        1st speed
                                                        Contr.-rod trav.mm: 10.70...10.80
Injection pump
Pump designation : PES6MW100/720RS1124
EP type number
                    : 0 413 406 118
                                                        Del.quantity cm3/: 8.0...8.2
Governor
Governor design. : RSV350...1300MW0A316
Governer no. : 0 420 085 047
                                                                       100H.: (7.8...8.4)
Governer no.
                                                        Dispersion
                                                                       cm3/: 0.35
Customer-spec. information
Customer
                                                                       100H.: (0.6)
                                                        2nd speed 1/min: 350.0 Contr.-rod trav. m: 7.0...7.6
Engine
                     : 0M366A
                                                        Del.quantity cm3/: 1.0...1.2
100H.: (0.8...1.4)
Dispersion cm3/: 0.35
100H.: (0.5)
1st version kW : 125.0
Speed
               1/min: 2600
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. "C
                                                        SLEEVE POSITION
                     : 38...42
                                                        Control-lever position
                                                                      Degree: -3
                                                                      17min: 800
Overflow valve
                                                        Speed
                     : 1 417 413 000
                                                        Cont.-rod travelmm: 0.30...1.00
                                                        Governor-spring reload
Inlet press., bar: 1.50
                                                        Notch setting x : 4.00
Calibrating nozzle-holder
                    : 0 681 343 009
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
 assembly
                                                        1st version
Opening
                                                                       1/min: 1300
pressure, bar : 172...175
                                                        Speed
                                                        Del.quantity cm3/: 80.0...82.0
1000H: (78.0...84.0)
Dispersion cm3/: 3.50
1000H: (6.00)
Test inj. tubing : 1 680 750 008
Outside diameter
                                                        HIGHEST RATED SPEED
x Wall thickness
                   : 6.00x2.00x600
x Length mm
                                                        1st version
                                                        Control-lever
(A) Injection pump setting values
                                                         position degrees: 54...61
    Insp. values in parentheses
Set constant delivery quant.
                                                        3rd c-rod trav.mm: 4.00
                                                          Speed 1/min: 1400...1430
th speed 1/min: 1450
C-rod trav.mm: 0.30...1.70
    per values ____
                                                        4th speed
START OF DELIVERY
                                                        LOWEST RATED SPEED I
Test pressure, bar: 30...32
                                                        Control-lever
                     : 3.70...3.80
                                                         position degrees: 12...20
Prestroke mm
                     : (3.65...3.85)
                                                        C-rod trav_mm : 2.00
Contr.-rod trav.mm: 9.00...12.00
                                                                 1/min : 445...505
                                                        Speed
F09
```

SET IDLE AUXILIARY SPRING Speed 1/min : 350

TORQUE CONTROL

Torque-control curve - 1st version

1/min : 1300 1st speed

C-rod trav.mm : 10.70...10.80 2nd speed 1/min : 700

C-rod trav.mm : 12.30...12.40 3rd speed 1/min : 825

C-rod trav.mm : 11.90...12.10

FUEL-DELIVERY CHARACTERISTICS

1/min : 700 Speed Del.quantity cm3/: 80.0...82.0 1000H.: (78.0...84.0)

Dispersion cm3/: 5.00 1000H.: (7.00) Speed 1/min: 825 Del.quantity cm3/: 80.5...82.5 1000H.: (77.5...85.5)

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                        Contr.-rod trav.mm: 9.00...12.00
                                                        Cam seguence : 1-5-3-6-2-4
Note inst. in remarks column
Test sheet
Edition
Superceeded
                    : IHC 7.6 K 1
: 12.09.86
                                                        SD ang. spacing ^{0}CS: 0-60-120-180-240-300 Tolerance + - ^{0}: 0.50 (0.75)
                    : 11.85
Calibrating oil : ISO-4113
                                                        SD mark cyl. no. : 1
Combination no.
                    : 0 403 476 030
                                                        BASIC SETTING
Injection pump
Pump designation : PES6MW100/320RS1109
                                                                        1/mi: 800
                                                        1st speed
EP type number
                     : 0 413 406 104
                                                        Contr.-rod trav.mm: 13.40...13.50
Governor
Governor design.
                     : RSV350...1250MW2/313
                                                        Del.quantity cm3/: 11.6...11.8
                       -3
                     : 0 420 085 049
Governer no.
                                                                       100H.: (11.4...12.0)
Customer-spec. information
Customer
                    : NAVI-STAR
                                                        Dispersion
                                                                       cm3/: 0.35
Engine
                     : DTI-466 C
                                                                       100H.: (0.6)
1st version kW : 160.0
                                                                       1/min: 350.0
                                                        2nd speed
                                                        Contr.-rod trav. m: 6.3...6.4
Del.quantity cm3/: 1.8...2.3
100H.: (1.6...2.5)
Dispersion cm3/: 0.35
100H.: (0.5)
               1/min: 2500
Speed
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. C
                     : 38...42
                                                        SLEEVE POSITION
Overflow valve
                                                        Control-lever position
                     : 2 417 413 037
                                                                      Degree: -3
                                                                       17min: 800
                                                        Cont.-rod travelmm: 0.30...1.00
Inlet pressa, bar : 2.80
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
Calibrating mozzle-holder
 assembly
           : 1 688 901 016
                                                        1st version
                                                                       1/min: 800
Opening
                                                        Speed
                                                        Charge press. hPa : 900
 pressure, bar : 207...210
                                                        Del.quantity cm3/: 116.5...118.5
1000H.: (114.5...120.5)
Dispersion cm3/: 3.50
1000H.: (6.00)
Test inj. tubing : 1 680 750 008
Outside diameter
                                                        HIGHEST RATED SPEED
x Wall thickness
                    : 6.00X2.00X600
x Length mm
                                                        1st version
                                                        Control-lever
                                                         position degrees: 52...57
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                        Testing:
    per values ____
                                                        1st c-rod trav.mm : 11.20
                                                          Speed 1/min: 1290...1300
                                                        2nd c-rod trav.mm: 4.00
START OF DELIVERY
                                                        Speed 1/min: 1390...1400
3rd c-rod trav.mm: 0.30...1.70
Test pressure, bar: 30...32
                    : 3.95...4.05
                                                          Speed 1/min: 1470
Prestroke mm
                    : (3.90...4.10)
F11
```

LOWEST RATED SPEED I Control-lever position degrees: 20...28 Setting point w/out aux. spring Speed 1/min: 350_ Contr.-rod trav.mm: 6.35 Testing: 1/min: 100 Speed C-rod trav.mm min: 19.00 Speed 1/min: 350 C-rod trav.mm : 6.3...6.4 SET IDLE AUXILIARY SPRING Contr.-rod trav.mm: 4.00 TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min: 800 C-rod trav.mm : 13.40...13.50 2nd speed 1/min: 1250 C-rod trav.mm : 12.20...12.30 3rd speed 1/min : 840 C-rod trav.mm : 13.40...13.50 4th speed 1/min: 1200 C-rod trav.mm : 12.20...12.30 compensator (LDA,ADA,ALDA) 1st version Setting 1/min : 500 Speed hPa : 900 Pressure Contr.-rod trav.mm: 13.40...13.50 Measurement 1/min : 500 Speed 1st pressure hPa : 490 C-rod trav.mm : 12.70...13.00 2nd pressure hPa : 200 : 11.80...11.90 C-rod trav.mm 3rd pressure hPa : -: 11.40...11.50 C-rod trav.mm FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa: 900 1/min : 1250 Del.quantity cm3/: 105.0...107.0 1000H.: (103.0...109.0) cm3/: 6.50 1000H.: (7.00) Dispersion Charge press. hPa : -Speed 1/min : 500 Del.quantity cm3/: 82.0...84.0 1000H.: (79.0...87.0)

Remarks: Starting/full-load transition speed from holding magnet = 500 1/min.

Start-of-delivery mark: stop lever 25° toward shutoff: control-rod travel = 9...12 mm. (Free travel of stop lever must have been overcome beforehand.)

Set low idle at stop screw.

Set shutoff stop 1.5...2.0 mm before shutoff.

Check hydraulic latching of starting fuel delivery with 1.5 bar air.

```
Contr.-rod trav.mm: 9.00...12.00
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                         Cam sequence : 1-5-3-6-2-4
Note inst. in remarks column
Test sheet
Edition
Superceeded
                    : IHC 7,6 R 4
: 12.09.86
                                                         SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                    : 11.85
Calibrating oil : ISO-4113
                                                         BASIC SETTING
Combination no.
                    : 0 403 476 047
                                                         1st speed
                                                                         1/mi: 950
Injection pump
Pump designation : PES6MW100/320RS1121
                                                         Contr.-rod trav.mm: 11.30...11.40
EP type number
                    : 0 413 406 115
                                                         Del.quantity cm3/: 10.8...11.0
Governor
Governor design. : RSV500...1250MW2/312
                                                                        100H.: (10.6...11.2)
                       -5
                     : 0 420 085 058
Governer no.
                                                         Dispersion
                                                                        cm3/: 0.35
Customer-spec. information
                                                                        100H.: (0.6)
Customer
                    : NAVI-STAR
                                                        2nd speed 1/min: 500.0

Contr.-rod trav. m: 5.4...5.5

Del.quantity cm3/: 1.6...2.0

100H.: (1.3...2.2)

Dispersion cm3/: 0.35
Engine
                     : DTI-466C
1st version kW : 167.0
               1/min: 2500
Speed
                                                                        100H.: (0.5)
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                                                         SLEEVE POSITION
                     : 38...42
                                                         Control-lever position
                                                                      Degree: -3
1/min: 800
Overflow valve
                     : 2 417 413 037
                                                         Cont.-rod travelmm: 0.30...1.00
                                                         FULL-LOAD DELIV. AT FULL-LOAD STOP
Inlet press., bar : 2.80
Calibrating nozzle-holder
                                                         1st version
                                                        Speed. 1/min: 950
Del'quantity cm3/: 108.0...110.0
             : 1 688 901 016
 assembly
                                                                      1000H:: (106.0...112.0)
cm3/: 3.50
1000H:: (6.00)
Opening
 pressure, bar
                    : 207...210
                                                         Dispersion
                                                        HIGHEST RATED SPEED
Test inj. tubing
                   : 1 680 750 008
                                                         1st version
Outside diameter
                                                         Control-lever
x Wall thickness
                                                          position degrees: 50...55
x Length mm
                    : 6.00x2.00x600
                                                        Testing:
                                                         1st c-rod trav.mm: 10.30
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                           Speed 1/min: 1315...1325
                                                        2nd c-rod trav.mm : 4.00
                                                         Speed 1/min: 1370...1380
3rd c-rod trav.mm: 0.30...1.70
    per values ____
                                                           <sup>d</sup>need
                                                                     1/min : 1400
START OF DELIVERY
Test pressure, bar: 30...32
                                                        LOWEST RATED SPEED I
                  : 3.95...4.05
Prestroke mm
                                                        Control-lever
                     : (3.90...4.10)
                                                         position degrees: 24...32
```

Setting point w/out aux. spring Speed 1/min: 500 Contr.-rod trav.mm: 5.45

Testing:

Speed 1/min: 100 C-rod trav.mm min: 19.00

FUEL-DELIVERY CHARACTERISTICS

```
Contr.-rod trav.mm: 9.00...12.00
Cam sequence : 1-5- 3- 6- 2- 4
BOSCH INJ. PUMP TEST SPECIFICATIONS
Note inst. in remarks column
Test sheet
                    : IHC 7,6 R 8
                                                       SD ang. spacing CS: 0-60-120-180-240-300 Tolerance +- : 0.50 (0.75)
Edition
                    : 12.09.86
Superceeded
Calibrating oil
                    : ISO-4113
                                                       BASIC SETTING
                    : 0 403 476 050
Combination no.
                                                       1st speed
                                                                      1/mi: 950
Injection pump
Pump designation : PES6MW100/320RS1121
                                                       Contr.-rod trav.mm: 11.80...11.90
EP type number
                    : 0 413 406 115
                                                       Del.quantity cm3/: 10.8...11.0
Governor
Governor design.
                    : RSV500...1250MW2A312
                                                                      100H.: (10.6...11.2)
                      -6
                    : 0 420 085 063
Governer no.
                                                                      cm3/: 0.35
                                                       Dispersion
Customer-spec. information
                    : NAVI-STAR
                                                                      100H.: (0.6)
Customer
                    : DT-466 C
                                                                      1/min: 500.0
Engine
                                                       2nd speed
                                                       Contr.-rod trav. m: 6.2...6.3
                                                       Del.quantity cm3/: 1.8...2.2
100H.: (1.3...2.6)
Dispersion cm3/: 0.35
100H.: (0.5)
1st version kW : 160.3
Speed
              1/min: 2500
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. °C
                                                       SLEEVE POSITION
                                                       Control-lever position
                    : 38...42
                                                                    Degree: -3
Overflow valve
                                                                     17min: 800
                    : 2 417 413 037
                                                       Cont.-rod travelmm: 0.30...1.00
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
Inlet press., bar : 2.80
Calibrating nozzle-holder
                                                       1st version
 assembly
                  : 1 688 901 016
                                                                      1/min: 950
                                                       Speed
                                                       Del.quantity cm3/: 108.0...110.0
                                                                    1000H:: (106.0...112.0)
cm3/: 3.50
1000H:: (6.00)
Opening
 pressure, bar : 207...210
                                                       Dispersion
                                                       HIGHEST RATED SPEED
Test inj. tubing : 1 680 750 008
                                                       1st version
Outside diameter
                                                       Control-lever
x Wall thickness
                                                        position degrees: 49...54
                    : 6.00x2.00x600
x Length mm
                                                       Testing:
(A) Injection pump setting values
                                                       1st c-rod trav.mm : 10.60
                                                       Speed 1/min: 1295...1305
2nd c-rod trav.mm: 4.00
    Insp. values in parentheses
Set constant delivery quant.
                                                       Speed 1/min: 1365...1375
3rd c-rod trav.mm: 0.30...1.70
    per values ____
                                                                    1/min : 1400
START OF DELIVERY
Test pressure, bar: 30...32
                                                       LOWEST RATED SPEED I
                    : 3.95...4.05
                                                      Control-lever
Prestroke mm
                    : (3.90...4.10)
                                                        position degrees: 22...30
F15
```

Setting point w/out aux. spring Speed 1/min: 500 Contr.-rod trav.mm: 6.25

Testing:

Speed 1/min: 100 C-rod trav.mm min: 19.00 Speed 1/min: 500 C-rod trav.mm : 6.2...6.3

SET IDLE AUXILIARY SPRING Contr.-rod trav.mm: 4.00

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min: 1250
Del.quantity cm3/: 107.0...111.0
1000H:: (105.0...113.0)

Dispersion cm3/: 6.50 1000H.: (7.00)

Remarks: Start-of-delivery mark: stop lever 25° toward shutoff: control-rod travel = 9...12 mm. (Free travel of scap lever must have been overcome beforehand.)

Set low idle at stop screw.

Set shutoff stop 1.5...2.0 mm before shutoff.

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                        Conto.-rod trav.mm: 12.00
                                                        Cam sequence : 12-9-3-6-8-11-1-4-10
-7-5-2
Note inst. in remarks column
Test sheet
                     : MTU 47,6 C
                     : 23.3.87
Superceeded
                                                        SD ang. spacing CS: 0-15-60-75-120-180-
                    : 3.85
Calibrating oil : ISO-4113
                                                                               195-240-255-300-315
                                                        Tolerance + - 0
                                                                             : 0.50(0.75)
Combination no.
                     : 0 406 030 999
                                                        BASIC SETTING
Injection pump
Pump designation : PEV12ZWM160/12ORS
                                                        1st speed
                                                                        1/mi: 1300
                     1030/11
                     : 0 416 060 999
                                                        Contr.-rod trav.mm: 9.00
EP type number
Governor
Governor design. : RQU425...600/1300ZWA
                                                        Del.quantity cm3/: 24.5...26.3 *
                       62-1
                     : 0 422 405 016
                                                                       100H.: (24-2...26.6)
Governer no.
                                                                       cm3/: 1.80
Customer-spec. information
                                                        Dispersion
Customer
                    : MTU
                                                                       190H.: (2.70)
Engine
                     : MB 873
                                                        2nd speed
                                                                       1/min: 425
                                                        Contr.-rod trav. m: 6.80
Del.quantity cm3/: 7.8...8.8 *
TEST BENCH REQUIREMENTS
                                                                       100H.: (-)
cm3/: 1.6
100H.: (-)
Calibrating-oil return temp. OC
                     : 42...45
                                                        Dispersion
Overflow valve
                                                                       1/min: 1300
                                                        1st speed
                                                        Contr.-rod trav.mm: 9.00
Del.quantity cm3/: 22.2..24.0**
Inlet press., bar: 3.0
                                                                      100H.: (21.9...24.3 cm3/: 1.80 100H.: (2.70) 1/min: 425
Overflow
                                                        Dispersion
 quantity min. 1/h: 600...720
                                                        2nd speed
                                                        Contr.-rod trav.mm: 6.80
Del.quantity cm3/: 5.7...6.7 **
100H.: (-)
Calibrating nozzle-holder
                    : 0 681 443 022
 assembly
                                                                       cm3/: 1.60
100H.: (-)
Opening
                                                        Dispersion
 pressure, bar : 172...175
                                                        SLEEVE POSITION
Test inj. tubing : 1 680 750 069
                                                        Control-lever position
                                                                     Degree: 45...55
1/min: 800
Outside diameter
                                                        Cont.-rod travelmm: 12.00...12.50
x Wall thickness
                   : 8,00x2,00x1500
x Length mm
                                                        FULL-LOAD DELIV. AT FULL-LOAD STOP
(A) Injection pump setting values
    Insp. values in parentheses
                                                        1st version
                                                        Speed 1/min: 1300
Del.quantity cm3/: 375.0...379.0 *
1000H.: (372.0...382.0)
    Set constant delivery quant.
    per values ____
                                                                     cm3/ : 8.0
START OF DELIVERY
                                                        Dispersion
                                                                      1000H.: (12.0)
                   : 2.50...2.60
: (2.45...2.65)
                                                        2nd version
Prestroke mm
                                                                       1/min: 1300
                                                        Speed
F17
```

Del.quantity cm3/: 357.0...361.0** 1000H.: (354.0...364.0) HIGHEST RATED SPEED 1st version Control-lever position degrees: 48...54 Setting point: Speed 1/min : 1300 Contr.-rod trav.mm: 13.8 Testing: 1st c-rod trav.mm : 12.80 Speed 1/min: 1325...1340 2nd c-rod trav.mm : 4.00 1/min : 1460 Speed 4th speed 1/min: 1510...1570 C-rod trav.mm : 0...0.1 LOWEST RATED SPEED I Control-lever position degrees: 15...21 Setting point w/out aux. spring Speed 1/min : 425 Contr.-rod trav.mm: 6.40...6.60 1/min : 300 Speed : 10.80...14.00 C-rod trav.mm C-rod trav.mm : 500 Speed 1/min : 3.20...5.3 C-rod trav.mm max : 0.01 1/min: 550...640 Speed

Remarks:

```
BOSCH INJ. PUMP TEST SPĒČĪFICATIONS
                                                     Cam sequence : 1-5-3-6-2-4
Note inst. in remarks column
                                                     SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.5(0.75)
Test sheet
                    : SCA 11,0 V7
                    : 24.11.86
Edition
Superceaded
Calibrating oil
                   : ISO-4113
                                                     SD mark cyl. no. : 1
                    : 9 400 087 370
Combination no.
                                                     BASIC SETTING
                                                                    1/mi: 900
Injection pump
                                                     1st speed
Pump designation : PE6P120A720RS7004
EP type number
                                                     Contr.-rod trav.mm: 12.80...12.90
                   : 0 412 626 801
Governor
                                                     Del.quantity cm3/: 20.8...21.0
Governor design. : RSV350...900P7/481
Governer no.
                   : 9 420 082 320
                                                                   100H.: (20.5...21.3)
Customer-spec. information
                                                     Dispersion
                                                                   cm3/:0.6
Customer
                   : SAAB-SCANIA
                    : DS 11
                                                                   100H.: (0.9)
Engine
                                                     2nd speed 1/min: 350
Contr.-rod trav. m: 5.40...5.60
Del.quantity cm3/: 1.20...1.8
100H.: (0.9...2.1)
Dispersion cm3/: 0.8
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. OC
                    : 38...42
                                                                   100H.: (1.2)
Overflow valve
                    : 1 417 413 025
                                                     SLEEVE POSITION
                                                     Control-lever position
Inlet press., bar: 1.5
                                                                  Degree: -3
1/min: 800
                                                     Speed
Calibrating nozzle-holder
                                                     Cont.-rod travelmm: 0.30...1.00
                   : 1 688 901 019
 assembly
                                                     Governor-spring reload
Opening
                   : 207...210
                                                     Notch setting x : 6.0
 pressure, bar
Perforated-plate
                                                     FULL-LOAD DELIV. AT FULL-LOAD STOP
 diameter mm
                    : 0.8
                                                     1st version
                                                                   1/min: 900
                                                     Speed
                                                     Del.quantity cm3/: 208.0...210.0
Test inj. tubing
                   : 1 680 750 015
                                                                  1000H.: (205.0...213.0)
                                                                  cm3/ : 6.0
1000H.: (9.0)
Outside diameter
                                                     Dispersion
x Wall thickness
                   : 6.00x1.50x600
x Length mm
                                                     HIGHEST RATED SPEED
                                                     1st version
(A) Injection pump setting values
    Insp. values in parentheses
                                                     Control-lever
    Set constant delivery quant.
                                                      position degrees: 46...54
    per values ____
                                                     Testing:
START OF DELIVERY
                                                     1st c-rod trav.mm : 11.80
                                                       Speed 1/min: 920...925
Test pressure, bar: 25..27
                                                     2nd c-rod trav.mm: 4.00
Prestroke mm
                    : 5.00...5.10
                                                       Speed 1/min: 960...970
                                                                  1/min : 1050
                    : (4.95...5.15)
                                                     4th speed
                                                       C-rod tray.mm : 0.30...1.70
Contr.-rod trav.mm: 9.00...12.00
F19
```

LOWEST RATED SPEED I

Control-lever

control-lever
position degrees: 16...24
Setting point w/out aux. spring
Speed 1/min: 350
Contr. rod trav.mm: 4.00
Speed 1/min: 350
C-rod trav.mm : 4.40...4.60
C-rod trav.mm : 2.00
Speed 1/min: 400...460

Remarks:

SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50(0.75) BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column BASIC SETTING Test sheet : CAS 8,3 A 7 : 25.2.87 Edition 1/mi: 1050 1st speed Superceeded Calibrating oil : ISO-4113 Contr.-rod trav.mm: 12.20...12.30 Combination no. : 9 400 230 002 Del.quantity cm3/: 14.4...14.6 Injection pump 100H.: (-) Pump designation : PES6A100D420LS3024 Governor Dispersion cm3/:0.3Governor design. : RSV375...1050ASB2036 100H.: (-) Customer-spec. information 1/min: 375 2nd speed Contr.-rod trav. m: 6.00...6.20 Del.quantity cm3/: 1.60...2.20 100H.: (-) Customer : CASE Engine : A-504 BDT TEST BENCH REQUIREMENTS SLEEVE POSITION Control-lever position Calibrating-oil inlet temp. C Degree: -3 17min: 800 : 40 Speed Cont.-rod travelmm: 0.30...0.70 Overflow valve FULL-LOAD DELIV. AT FULL-LOAD STOP : WS 187P Inlet press., bar : 175 1st version 1/min: 1050 Speed Del.quantity cm3/: 144.0...146.0 Calibrating nozzle-holder 1000H.: (142.0...148.0) cm3/: 3.00 : 0 681 343 009 assembly Dispersion 1000H.: (-) Opening pressure, bar : 172...175 HIGHEST RATED SPEED 1st version Control-lever Test inj. tubing : 9 681 230 706 position degrees: 42...50 Outside diameter x Wall thickness Testing: x Length mm : 6.00x2.00x600 1st c-rod trav.mm : 11.20 Speed 1/min: 1090...1100 2nd c-rod trav.mm: 3.00 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. 1/min : 1175....1205 Speed per values ____ LOWEST RATED SPEED I Control-lever START OF DELIVERY position degrees: 19...27 Setting point w/out aux. spring Speed 1/min: 375 Contr.-rod trav.mm: 6.00 Prestroke mm : 2.00...2.10 : (1.95...2.15) Contr.-rod trav.mm: 12.20 Cam sequence : 1-5-3-6-2-4 Testing: 1/min : 150 Speed C-rod trav.mm min : 19.00 C-rod trav.mm : 2.60 1/min : 430...470 Speed

TORQUE CONTROL

Torque-control curve - 1st version

In the speed 1/min: 1050
C-rod trav.mm: 12.20...12.30
2nd speed 1/min: 700
C-rod trav.mm: 12.60...12.70
3rd speed 1/min: 600

C-rod trav.mm : 12.60...12.70

SWITCH-OVER POINT

1/min: 190 Speed

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min: 700 Del.quantity cm3/: 149.0...153.0 1000H.: (147.0...155.0)

Remarks:

: CASE NO. A 152735

SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column BASIC SETTING Test sheet : CAS 8.3 A 8 : 25.2.87 Edition 1/mi: 1050 1st speed Superceeded Calibrating oil : ISO-4113 Contr.-rod trav.mm: 11.30...11.40 : 9 400 230 003 Combination no. Del.quantity cm3/: 12.9...13.1 Injection pump 100H.: (-) Pump designation : PES6A100D420LS3024 cm3/:30Governor Dispersion Governor design. : RSV375...1050A2B2035 100H.: (-) Customer-spec. information 1/min: 375 2nd speed Customer Contr.-rod trav. m: 6.00...6.10 : CASE Del.quantity cm3/: 1.60...2.20 100H.: (-) Engine : A-504 BDT TEST BENCH REQUIREMENTS SLEEVE POSITION Control-lever position Calibrating-oil inlet temp. °C Degree: -3 1/min: 800 : 40 Cont.-rod travelmm: 0.30...0.70 Overflow valve FULL-LOAD DELIV. AT FULL-LOAD STOP : WS 187P Inlet press., bar : 1.50 1st version 1/min: 1050 Speed Del.quantity cm3/: 129...142 Calibrating nozzle-holder 1000H.: (135...132) cm3/: 3.00 : 0 681 343 009 assembly Dispersion Opening 1000H.: (-) pressure, bar : 172...175 HIGHEST RATED SPEED 1st version Test inj. tubing : 9 681 230 706 Control-lever position degrees: 46...54 Outside diameter x Wall thickness Testing: x Length mm : 6.00x2.00x600 1st c-rod trav.mm : 10.30 Speed 1/min: 1090...1100 2nd c-rod trav.mm : 3.3 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. 1/min: 1175...1205 Speed per values ____ LOWEST RATED SPEED I Control-lever START OF DELIVERY position degrees: 25...33 Setting point w/out aux. spring : 2.00...2.10 : (1.95...2.15) 1/min : 375 Prestroke mm Speed Contra-rod travamm: 6.00 Contr.-rod trav.mm: 11.30 Cam sequence : 1-5-3-6-2-4 Testing: 1/min : 150 Speed C-rod trav.mm min : 19 C-rod trav.mm : 2.6 1/min : 430...470 Speed

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min: 1050 C-rod trav.mm: 11.30 2nd speed 1/min: 700

C-rod trav.mm : 11.95...12.15 3rd speed 1/min : 600

C-rod trav.mm : 12.03

SWITCH-OVER POINT

Speed 1/min : 190

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min: 700 Del.quantity cm3/: 138.0...142.0 1000H.: (135.0...145.0)

Remarks:

: CASE NO.A-150570

SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50(0.75) BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column BASIC SETTING : CAS 8.3 K 5 Test sheet : 26.2.87 Edition 1/mi: 1050 1st speed Superceeded Calibrating oil : ISO-4113 Contr.-rod trav.mm: 13.35 Del.quantity cm3/ : 11.3...11.5 : 9 400 230 005 Combination no. Injection pump 100H.: (-) Pump designation : PES6A95D42OLS2551 Governor Dispersion cm3/:0.3: RSV375...1070A2B Governor design. 2034R 100H.: (-) Customer-spec. information 1/min: 375 2nd speed Contr.-rod trav. m: 8.10 Del.quantity cm3/: 1.6...2.2 100H.: (-) Customer : CASE : A-504 BD Engine TEST BENCH REQUIREMENTS SLEEVE POSITION Control-lever position Calibrating-oil inlet temp. °C Degree: -3 : 38...42 17min: 800 Speed Cont.-rod travelmm: 0.30...0.70 Overflow valve FULL-LOAD DELIV. AT FULL-LOAD STOP : WS 187P Inlet press., bar: 1.5 1st version 1/min: 1050 Speed Del.quantity cm3/: 113...115 Calibrating nozzle-holder : 0 681 343 009 1000H.: (111...117) assembly HIGHEST RATED SPEED Opening pressure, bar : 172...175 1st version Control-lever position degrees: 48...56 Test inj. tubing : 9 681 230 705 Testing: Outside diameter 1st c-rod trav.mm : 12.25 Speed 1/min : 1090...1100 x Wall thickness x Length mm : 6.00x2.00x600 2nd c-rod trav.mm : 6.90 1/min: 1170...1200 Speed 3rd c-rod trav.mm : 2.00 (A) Injection pump setting values 1/min : 1205...1235 Insp. values in parentheses Speed Set constant delivery quant. LOWEST RATED SPEED I per values ____ Control-lever START OF DELIVERY position degrees: 27...35 Setting point w/out aux. spring 1/min : 375 : 2.20...2.30 Prestroke mm Speed : (2.15...2.35) Contr.-rod trav.mm: 8.10...8.20 Contr.-rod trav.mm: 13.35 Cam sequence : 1-5-4-6-2-4 Testing: 1/min : 150 Speed C-rod trav.mm min: 19-21 C-rod trav.mm : 3.00 Speed 1/min : 530...570

TORQUE CONTROL

Torque-control curve - 1st version 1st speed 1/min: 425 C-rod trav.mm: 14.00...14.6

SWITCH-OVER POINT

1/min : 190 Speed

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min: 700 Del.quantity cm3/: 149...153 1000H.: (147...155)

Remarks:

: CASE NO. A-151333

SD ang. spacing $^{\circ}$ CS: 0-60-120-180-240-300 Tolerance + - $^{\circ}$: 0.50(0.75) BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column BASIC SETTING Test sheet : DEE 6.6 B Edition : 2.3.87 1/mi: 1200 1st speed Superceeded : ISO-4113 Contr.-rod trav.mm: 8.80 Calibrating oil : 9 400 230 006 Combination no. Del.quantity cm3/: 8.4...8.6 Injection pump 100H.: (-) : PES6A95D410RS2559 Pump designation Governor Dispersion cm3/:0.3Governor design. : RSV400...1200A2B2043 100H.: (-) 1/min: 400 Customer-spec. information 2nd speed Contr.-rod trav. m: 5.20
Del.quantity cm3/: 1.1...1.5
100H.: (-)
Dispersion cm3/: 3.0
100H.: (-) Customer : JOHN DEERE Engine : 6404 T TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. OC SLEEVE POSITION : 36...44 Control-lever position Degree: -3 17min: 800 Overflow valve Speed : 1 423 385 007 Cont.-rod travelmm: 0.30...0.70 FULL-LOAD DELIV. AT FULL-LOAD STOP Inlet press., bar: 1.5 Calibrating nozzle-holder 1st version : 0 681 343 009 Speed 1/min: 1050 assembly Del.quantity cm3/: 144.0...146.0 1000H.: (142.0...148.0) Opening pressure, bar : 172...175 HIGHEST RATED SPEED 1st version : 1 680 750 Q08 Control-lever Test inj. tubing position degrees: 44...52 Outside diameter x Wall thickness Testing: : 6.35x2.08x600 1st c-rod trav.mm: 7.80 x Length mm Speed 1/min: 1245...1255 2nd c-rod trav.mm: 4.00 (A) Injection pump setting values Speed 1/min: 1290...1320 3rd c-rod trav.mm: 4.00 Insp. values in parentheses Set constant delivery quant. 1/min : 1290...1320 per values ____ Speed 1/min : 1400 4th speed START OF DELIVERY C-rod trav.mm : 0.30...1.70 : 1.85...1.95 LOWEST RATED SPEED I Prestroke mm : (1.80...2.00) Control-lever Contr.-rod trav.mm: 10.50 position degrees: 18...26 Cam sequence : 1-5-3-6-2-4 Testing: Speed 1/min : 400 C-rod trav.mm min: 4.60 1/min : 400 Speed

C-rod trav.mm : 5.10...5.30 C-rod trav.mm : 19.00 Speed 1/min: 100 C-rod trav.mm: 2.00 Speed 1/min: 585...645

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min: 1200 C-rod trav.mm: 8.80 2nd speed 1/min: 800

C-rod trav.mm : 9.30...9.50

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min: 800 Del.quantity cm3/: 88.0...92.0 1000H.: (86.0...94.0)

Remarks:

: JOHN DEERE NO. 88753

BOSCH INJ. PUMP TEST SPECIFICATIONS BASIC SETTING Note inst. in remarks column 1st speed 1/mi: 1080 Test sheet : DEE 7.6 H : 2.3.87 Edition Contr.-rod trav.mm: 10.20 Superceeded Calibrating oil : ISO-4113 Del.quantity cm3/: 9.5...9.7 : 9 400 230 007 Combination no. 100H.: (-) Injection pump cm3/:0.3Dispersion Pump designation : PES6A95D410RS2560 100H.: (-) Governor Governor design. : RSV400...1100A7B 2nd speed 1/min: 400 Contr.-rod trav. m: 5.80 Del.quantity cm3/: 1.2...1.6 100H.: (-) 2044L Customer-spec. information Customer : JOHN DEERE : 6466 T SLEEVE POSITION Engine Control-lever position TEST BENCH REQUIREMENTS Degree: -3 1/min: 800 Calibrating-oil inlet temp. OC Cont.-rod travelmm: 0.30...0.70 : 38...42 FULL-LOAD DELIV. AT FULL-LOAD STOP Overflow valve : 1 413 385 007 1st version 1/min: 1080 Speed Del.quantity cm3/: 95.0...97.0 1000H.: (93.0...99.0) Inlet press., bar: 1.5 Calibrating nozzle-holder : 0 681 343 009 HIGHEST RATED SPEED assembly 1st version Control-lever Opening pressure, bar : 172...175 position degrees: 66...74 Testing: Test inj. tubing : 1 680 750 008 1st c-rod trav.mm : 9.20 Speed 1/min: 1115...1125 2nd c-rod trav.mm : 5.00 Outside diameter Speed 1/min: 1145 3rd c-rod trav.mm: 0.30...1.70 x Wall thickness : 6.00x2.00x600 x Length mm 1/min : 1200 Speed (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. LOWEST RATED SPEED I Control-lever per values position degrees: 17...25 Testing: START OF DELIVERY 1/min : 400 Speed C-rod trav.mm min: 5.70 Prestroke mm : 1.85...1.95 : (1.80...2.00) Speed 1/min: 100 C-rod trav.mm : 19.00...21.00 C-rod trav.mm : 5.80 : 1-5-3-6-2-4 Cam sequence Speed 1/min: 400 C-rod trav.mm: 2.00 SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - 0.50(0.75) 1/min: 520...580 Speed G01

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min: 1100
C-rod trav.mm: 0...0.10
2nd speed 1/min: 750
C-rod trav.mm: 0...0.20
3rd speed 1/min: 450
C-rod trav.mm: 0..70...1.30

Remarks:

: JOHN DEERE NO. AR : 88752

BOSCH INJ. PUMP TEST SPECIFICATIONS BASIC SETTING Note inst. in remarks column 1/mi: 1100 1st speed Test sheet : DEE 6.6 C Edition : 2.3.87 Contr.-rod trav.mm: 10.15...10.25 Superceeded : ISO-4113 Del.quantity cm3/: 10.92...11.12 Calibrating oil Combination no. : 9 400 230 008 100H.: (-) Injection pump cm3/:0.3Dispersion : PES6A100D410RS3031 Pump designation 100H.: (-) Governor Governor design. : RSV400...1100A2B2045 1/min: 400 DL 2nd speed Contr.-rod trav. m: 5.80
Del.quantity cm3/: 3.33...1.73
100H.: (-) Customer-spec. information Customer : JOHN DEERE : 6404 A SLEEVE POSITION Engine Control-lever position TEST BENCH REQUIREMENTS Degree: --3 17min: 800 Speed Calibrating-oil inlet temp. °C Cont.-rod travelmm: 0.30...0.70 : 38...42 FULL-LOAD DELIV. AT FULL-LOAD STOP Overflow valve : 1 413 385 007 1st version 1/min: 1050 Speed Inlet press., bar: 1.5 Del.quantity cm3/: 144.0...146.0 1000H.: (142.0...148.0) Calibrating nozzle-holder : 0 681 343 009 assembly HIGHEST RATED SPEED 1st version Opening Control-lever pressure, bar : 172...175 position degrees: 40...48 3rd c-rod trav.mm : 10.15...10.2 1/min : 1100 Speed 1/min: 1145...1155 Test inj. tubing : 1 680 750 008 4th speed C-rod trav.mm : 9.20 5th speed 1/min: 1200 Outside diameter x Wall thickness : 4.50 C-rod trav.mm : 6.00x2.00x600 x Length mm LOWEST RATED SPEED I Control-lever (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. position degrees: 17...25 17min : 100 Speed per values C-rod trav.mm : 19.00...21.00 mm : 5.80 1/min : 400 mm : 2.00 C-rod trav.mm START OF DELIVERY Speed C-rod trav.mm 1/min: 480...540 Prestroke mm : 1.95...2.05 Speed : (1.90...2.10) Cam sequence : 1-5-3-6-2-4 TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min: 1100 C-rod trav.mm : 0...0.10 SD ang. spacing $^{\circ}$ CS: 0-60-120-180-240-300 Tolerance + - $^{\circ}$: 0.50(0.75) 2nd speed 1/min: 500 C-rod trav.mm: 1.55...1.65

G03

FUEL-DELIVERY CHARACTERISTICS

Remarks:

: JOHN DEERE NO. : AR 88756

BOSCH INJ. PUMP TEST SPECIFICATIONS BASIC SETTING Note inst. in remarks column 1st speed 1/mi: 1100 Test sheet : DEE 7.6 M 1 : 26.2.87 Edition Contr.-rod trav.mm: 10.80 Superceeded Del.quantity cm3/: 10.65...10.85 Calibrating oil : ISO-4113 : 9 400 230 010 100H.: (-) Combination no. Injection pump Dispersion cm3/:0.3Pump designation : PES6A100D410RS3032 100H.: (-) Governor Governor design. : RSV400...1100A2B2047 1/min: 400 2nd speed Contr.-rod trav. m: 6.10 Del.quantity cm3/: 1.08...1.48 100H.: (-) Customer-spec. information Customer : JOHN DEERE SLEEVE POSITION : 6466 A Engine Control-lever position Degree: -3 1/min: 800 TEST BENCH REQUIREMENTS Speed Calibrating-oil inlet temp. ⁹C Cont.-rod travelmm: 0.30...0.70 : 38...42 FULL-LOAD DELIV. AT FULL-LOAD STOP Overflow valve : 1 413 385 007 1st version Speed 1/min: 1100 Del.quantity cm3/: 106.5...108.5 1000H.: (104.5...110.5) Inlet press., bar: 1.5 Calibrating nozzle-holder HIGHEST RATED SPEED : 0 681 343 009 assembly 1st version Opening Control-lever pressure, bar : 172...175 position degrees: 40...48 Testing: 1st c-rod trav.mm : 9.80 Speed 1/min : 1145...1155 2nd c-rod trav.mm : 5.10 Test inj. tubing : 1 680 750 008 Outside diameter 1/min : 1200 x Wall thickness Speed : 6.00X2.00X600 x Length mm LOWEST RATED SPEED I Control-lever (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. position degrees: 17...25 Setting point w/out aux. spring Speed 1/min: 400 Contr.-rod trav.mm: 6.10 per values ____ START OF DELIVERY Testing: 1/min : 100 : 2.0...2.1 Prestroke mm Speed C-rod trav.mm min: 19.00 : (1.95...2.15) Cam sequence : 1-5-3-6-2-4 C-rod trav.mm : 6.10 Speed 1/min : 400 C-rod trav.mm : 2.00 1/min : 450...510 Speed SD ang. spacing 0 CS: 0-60-120-180-240-300 Tolerance + - 0 : 0.50(0.75) TORQUE CONTROL

G05

Torque-control curve - 1st version 1st speed 1/min : 1100 C-rod trav.mm : 10.8 2nd speed 1/min : 525 C-rod trav.mm : 12.6

FUEL-DELIVERY CHARACTERISTICS

Remarks:

: JOHN DEERE NO. AR

:wee . . .

: 88757

SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50(0.75) BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column BASIC SETTING Test_sheet : DEE 7.6 J 2 : 2.3.87 Edition 1st speed 1/mi: 1100 Superceeded Calibrating oil : ISO-4113 Contr.-rod trav.mm: 11.35...11.45 : 9 400 230 012 Del.quantity cm3/: 11.2...11.4 Combination no. Injection pump 100H.: (-) Pump designation : PES6A95D41ORS2561 Governor Dispersion cm3/:3.0Governor design. : RSV600...1100A2B2049 100H.: (-) 2nd speed 1/min: 600 Contr.-rod trav. m: 5.30...5.50 Customer-spec. information : JOHN DEERE Customer Del.quantity cm3/: 1.2...1.6 100H.: (-) cm3/: 3.0 Engine : 6466 TH Dispersion 100H.: (-) TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. ⁰C SLEEVE POSITION : 36...44 Control-lever position Degree: -3 1/min: 800 Overflow valve Speed : 1 413 385 007 Cont.-rod travelmm: 0.30...0.70 FULL-LOAD DELIV. AT FULL-LOAD STOP Inlet press., bar: 1.5 Calibrating nozzle-holder 1st version : 0 681 343 009 assembly 1/min: 1100 Speed Del.quantity cm3/: 112.0...114.0 1000H.: (110.0...116.0) Opening pressure, bar : 172...175 HIGHEST RATED SPEED 1st version Test inj. tubing : 1 680 750 008 Control-lever position degrees: 36.5...44.5 Outside diameter x Wall thickness Testing: : 6.00X2.00X600 1st c-rod trav.mm: 10.40 x Length mm Speed 1/min: 1145...1155 2nd c-rod trav.mm : 4.00 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. 1/min : 1220...1250 Speed 3rd c-rod trav.mm : 0.30....1.70 per values ____ 1/min : 1300 Speed START OF DELIVERY LOWEST RATED SPEED I Control-lever : 1.85...1.95 position degrees: 18...26 Prestroke mm : (1.80...2.00) Contr.-rod trav.mm: 10.50 Testing: Cam sequence : 1-5-3-6-2-4 1/min : 600 Speed C-rod trav.mm min: 4.90 Speed 1/min : 600 C-rod trav.mm : 5.40 C-rod trav.mm : 19.0

Remarks:

SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50(0.75) BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column BASIC SETTING Test sheet : DEE 7.6 U Edition : 2.3.87 1st speed 1/mi: 1100 Superceeded Calibrating oil : ISO-4113 Contr.-rod trav.mm: 12.15...12.25 Combination no. : 9 400 230 013 Del.quantity cm3/: 13.45...13.65 Injection pump 100H.: (-) Pump designation : PES6A100D410RS3033 cm3/:3.0Governor Dispersion : RSV600...1100A2B2050 Governor design. 100H.: (-) Customer-spec. information 1/min: 600 2nd speed Contr.-rod trav. m: 4.80...5.00 Customer : JOHN DEERE Del.quantity cm3/: 1.3 ...1.7 100H.: (-) Dispersion cm3/: 3.0 100H.: (-) Engine : 6466 AH TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C SLEEVE POSITION : 36...44 Control-lever position Degree: -3 17min: 800 Overflow valve Speed : 1 413 385 007 Cont.-rod travelmm: 0.30...0.70 FULL-LOAD DELIV. AT FULL-LOAD STOP Inlet press., bar: 1.5 Calibrating nozzle-holder 1st version : 0 681 343 009 assembly 1/min: 1100 Speed Del.quantity cm3/: 134.5...136.5 1000H.: (131.5...139.5) Opening pressure, bar : 172...175 HIGHEST RATED SPEED 1st version Test inj. tubing : 1 680 750 008 Control-lever position degrees: 33...41 Outside diameter x Wall thickness Testing: x Length mm : 6.00x2.00x600 1st c-rod trav.mm : 11.00 Speed 1/min: 1145...1155 2nd c-rod trav.mm : 4.00 Speed 1/min : 1180...1210 3rd c-rod trav.mm : 0.30...1.70 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values ____ Speed 1/min : 1300 START OF DELIVERY LOWEST RATED SPEED I Control-lever Prestroke mm : 1.95...2.05 position degrees: 15...23 : (1.90...2.10) Testing: Contr.-rod trav.mm: 10.50 Cam sequence : 1-5-3-6-2-4 1/min : 600 Speed C-rod trav.mm min : 4.40 1/min : 100 Speed C-rod trav.mm : 19.00 C-rod trav.mm : 4.90

 Speed
 1/min : 600

 Speed
 1/min : 850

 C-rod trav.mm max : 1.00

 C-rod trav.mm : 2.00

 Speed
 1/min : 625...685

Remarks:

: JOHN DEERE NO. : AR 97584

SD ang. spacing CS: 0-45-90-135-180-225-BOSCH INJ. PUMP TEST SPECIFICATIONS 270-315 Tolerance + - D Note inst. in remarks column : 0.50(0.75) Test sheet : IHC 9.0 F 2 BASIC SETTING : 3.3.87 Edition 1/mi: 1500 Superceeded 1st speed Calibrating oil : ISO-4113 Contr.-rod trav.mm: 9.65...9.75 : 9 400 230 015 Combination no. Del.quantity cm3/: 5.9...6.0 Injection pump Pump designation : PES8A75D32ORS2463 100H.: (-) Governor Governor design. : RQV300...1500AB1058 Dispersion cm3/:0.2100H.: (-) Customer-spec. information Customer 1/min: 300 2nd speed Contr.-rod trav. m: 5.20 Del.quantity cm3/: 1.5...2.0 Engine : DV 550 C 100H.: (-) TEST BENCH REQUIREMENTS SLEEVE POSITION Calibrating-oil inlet temp. OC Control-lever position : 38...42 Degree: -1 17min: 1600 Speed Overflow valve Cont.-rod travelmm: 15.00...18.50 FULL-LOAD DELIV. AT FULL-LOAD STOP Inlet press., bar: 2.5 1st version Speed 1/min: 1500 Del.quantity cm3/: 58.8...59.8 1000H.: (55.8...61.8) Calibrating nozzle-holder : 0 681 343 009 assembly cm3/ : 2.0 1000H.: (-) Opening Dispersion pressure, bar : 172...175 HIGHEST RATED SPEED Test inj. tubing : 9 681 230 702 1st version Control-lever Outside diameter position degrees: 64...72 x Wall thickness x Length mm : 6.00x2.00x600 Testing: 1st c-rod trav.mm : 8.70 Speed 1/min: 1600...1610
2nd c-rod trav.mm: 9...14
Speed 1/min: 1700
3rd c-rod trav.mm: 3.00...9.50 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant, per values Speed 1/min: 1800 4th speed 1/min: 2000 START OF DELIVERY : 0 ... 0 . 10 C-rod trav.mm : 1.95...2.05 * Prestroke mm : (1.90...2.10) LOWEST RATED SPEED I Contr.-rod trav.mm: 10.70 Control-lever Prestroke mm : ** position degrees: 6...14 Cam sequence : 1-8-7-3-6-5-4-2 Testing: 1/min : 200 Speed C-rod trav.mm min: 8.20

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Speed
               1/min : 300
C-rod trav.mm : 5.40...7.30
                        : 3.05
C-rod trav.mm
               1/min : 450
Speed
               1/min: 870
Speed
C-rod trav.mm max: 0.10
Speed 1/min: 600
C-rod trav.mm
                    : 1.95
TORQUE CONTROL
Dimension a mm : 0.30
Torque-control curve - 1st version
1st speed 1/min : 1500
C-rod trav.mm : 9.70
2nd speed 1/min : 1000
C-rod trav.mm : 10.00...10.10
3rd speed 1/min : 700
   C-rod trav.mm : 10.00...10.10
SWITCH-OVER POINT
Speed
               1/min : 150...230
FUEL-DELIVERY CHARACTERISTICS
               1/min : 1000
Speed
Del.quantity cm3/: 50.5...52.5
1000H: (47.5...54.5)
Speed 1/min: 300 *
Del.quantity cm3/: 1.0...15.0
1000H:: (-)
Speed 1/min: 300**
Del.quantity cm3/: 37.0...46.0
1000H:: (-)
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SD ang. spacing CS: 45-90-135-180-225-BOSCH INJ. PUMP TEST SPECIFICATIONS 270-315 Tolerance + - D Note inst. in remarks column : 0.50(0.75) : IHC 9.0 F 3 BASIC SETTING Test sheet : 3.3.87 Edition Superceeded 1st speed 1/mi: 1500 Calibrating oil : ISO-4113 Contr.-rod trav.mm: 10.65...10.75 Combination no. : 9 400 230 016 Del.quantity cm3/: 6.8...6.9 Injection pump Pump designation : PES8A75D32ORS2463 100H.: (-) Governor : RQV300...1500AB1059 Governor design. Dispersion cm3/:0.2100H.: (-) Customer-spec. information Customer 2nd speed 1/min: 300 Contri-rod trav. m: 6.00 Del.quantity cm3/: 1.6...2.0 100H.: (-) : DV 550 C Engine TEST BENCH REQUIREMENTS SLEEVE POSITION Control-lever position Calibrating-oil inlet temp. °C Degree: -1 : 38...42 17min: 1600 Speed Overflow valve Cont.-rod travelmm: 15.00...18.50 FULL-LOAD DELIV. AT FULL-LOAD STOP Inlet press., bar: 2.5 1st version Calibrating nozzle-holder 1/min: 1500 Speed Del.quantity cm3/: 68.0...69.0 : 0 681 343 009 assembly 1000H_a: (64.5...70.5) Opening pressure, bar : 172...175 HIGHEST RATED SPEED 1st version Control-lever position degrees: 64...72 Test inj. tubing : 9 681 230 702 Testing: Outside diameter 1st c-rod trav.mm: 9.70 x Wall thickness 1/min : 1600...1610 : 6.00X2.00X600 x Length mm Speed 2nd c-rod trav.mm: 9...14 Speed 1/min: 1700 3rd c-rod trav.mm: 3.00...9.50 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. Speed 1/min: 1800 per values ____ 1/min : 2000 4th speed C-rod trav.mm : 0...0.10 START OF DELIVERY LOWEST RATED SPEED I : 1.95...2.05 * : (1.90...2.00) Control-lever Prestroke mm position degrees: 6...14 Contr.-rod trav.mm: 10.70 Prestroke mm : ** Testing: : 1-8-7-3-6-5-4-2 1/min: 200 Cam sequence Speed C-rod trav.mm min: 8.20 1/min : 300 Speed C-rod trav.mm : 5.40...7.30

mm : 3.05 1/min : 450 C-rod trav.mm Speed 1/min : 870 Speed C-rod trav.mm max: 0.30 Speed 1/min : 600 C-rod trav.mm : 2.05 SWITCH-OVER POINT 1/min : 150...230 Speed FUEL-DELIVERY CHARACTERISTICS

1/min : 300 * Speed

Del.quantity cm3/: 1.0...15.0 1000H.: (0...16.0) Speed 1/min: 300** Del.quantity cm3/: 37.0...46.0 1000H.: (35.5...47.5)

Remarks:

SD ang. spacing CS: 0-60-120-180-240-300 Toterance + - : 0.50(0.75) BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column BASIC SETTING : DEE 7.6 C 5 Test sheet Edition : 3.3.87 1/mi: 1100 1st speed Superceeded Calibrating oil : ISO-4113 Contr.-rod trav.mm: 9.80 : 9 400 230 026 Del.quantity cm3/: 8.8...9.0 Combination no. Injection pump 100H.: (-) Pump designation : PES6A95D410RS2522 Governor Dispersion cm3/:0.3Governor design. : RSV400...1100A2B2104 100H.: (-) Customer-spec. information 1/min: 400 2nd speed Contr.-rod trav. m: 5.60

Del.quantity cm3/: 1.2...1.6

100H.: (-)

Dispersion cm3/: 3.0

100H.: (-) Customer : JOHN DEERE Engine : 6466 T TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. OC SLEEVE POSITION : 38...42 Control-lever position Degree: -3 17min: 800 Overflow valve Speed : 1 417 413 000 Cont.-rod travelmm: 0.30...0.70 FULL-LOAD DELIV. AT FULL-LOAD STOP Inlet press., bar : 1.5 Calibrating nozzle-holder 1st version : 0 681 343 009 Speed assembly 1/min: 1100 Charge press. hPa: 670 Del.quantity cm3/: 88.0...90.0 1000H.: (85.0...93.0) Opening pressure, bar : 172...175 HIGHEST RATED SPEED Test inj. tubing : 1 680 750 008 1st version Control-lever position degrees: 40...48 Outside diameter x Wall thickness : 3.00x1.50x600 x Length mm Testing: 1st c-rod trav.mm : 8.80 Speed 1/min: 1145...1155 2nd c-rod trav.mm: 4.00 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. Speed 1/min : 1220...1250 3rd c-rod trav.mm : 0.30...1.70 per values ____ 1/min : 1300 Speed START OF DELIVERY LOWEST RATED SPEED I Control-lever Prestroke mm : 1.90...2.00 : (1.85...2.05) position degrees: 17...25 Contr.-rod trav.mm: 10.50 Cam sequence : 1-5-3-6-2-4 Testing: 1/min: 400 Speed C-rod trav.mm min : 5.00 1/min : 400 Speed C-rod trav.mm : 5.50...5.70

C-rod trav.mm : 19.00 Speed 1/min : 100 Speed 1/min : 750 C-rod trav.mm max : 1.00 C-rod trav.mm : 2.00 1/min : 610...670 Speed

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min: 1100 C-rod trav.mm: 9.75...9.85 2nd speed 1/min: 900

C-rod trav.mm : 10.00...10.30 3rd speed 1/min : 750

C-rod trav.mm : 10.45...10.55

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 670 Speed 1/min : 750 Del.quantity cm3/ : 97.0...100.0 1000H.: (93.0...104.0) Speed 1/min : 550

Del.quantity cm3/: 64.0...70.0 1000H.: (58.0...76.0)

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3

Remarks:

SD ang. spacing $^{\circ}$ CS: 0-60-120-180-240-300Tolerance + - $^{\circ}$: 0.50(0.75)BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column BASIC SETTING Test sheet Edition Superceeded : CAS 8.3 A 6 : 26.2.87 1st speed 1/mi: 1050 Calibrating oil : ISO-4113 Contr.-rod trav.mm: 12.70 Combination no. : 9 400 230 027 Del.quantity cm3/: 14.05...14.25 Injection pump 100H.: (-) Pump designation : PES6A100D420LS3024 Governor Dispersion cm3/:0.3: RSV375---1050A2B Governor design. 2107R 100H.: (-) 2nd speed Customer-spec. information 1/min: 375 Contr.-rod trav. m: 5.70 Del.quantity cm3/: 1.65...2.25 Customer 100H.: (-) Engine : A 540 BDT cm3/: 0.3 100H.: (-) Dispersion. TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. C SLEEVE POSITION : 38...42 Control-lever position Degree: -3 17min: 800 Overflow valve Speed : 9 681 273 009 Cont.-rod travelmm: 0.30...0.70 FULL-LOAD DELIV. AT FULL-LOAD STOP Inlet press., bar: 1.5 Calibrating nozzle-holder 1st version : 0 681 343 009 assembly 1/min: 1050 Speed Del.quantity cm3/: 140.5...142.5 1000H.: (138.5...144.5) Opening. pressure, bar : 172...175 HIGHEST RATED SPEED 1st version Test in i. tubing : 9 681 230 706 Control-lever position degrees: 34.5...42.5 Outside diameter x Wall thickness Testing: : 6.00x2.00.600 1st c-rod trav.mm : 11.70 x Length mm Speed 1/min: 1090...1100 2nd c-rod trav.mm : 4.00 Speed 1/min : 1135...1165 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. 3rd c-rod trav.mm : 0.30...1.70 per values ____ 1/min : 1230 START OF DELIVERY LOWEST RATED SPEED I Control-lever Prestroke mm : 2.00...2.10 position degrees: 14...22 Setting point w/out aux. spring Speed 1/min: 375 : (1.95...2.15) Contr.-rod trav.mm: 10.50 Cam sequence : 1-5-3-6-2-4 Contr.-rod trav.mm: 5.10...5.30 Testing: 1/min : 375 Speed C-rod trav.mm min: 5.60

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Speed
           1/min : 100
C-rod trav.mm : 19.00
C-rod tray mm
                   : 1.00
Speed 1/min : 600
C-rod trav.mm : 2.0
           1/min : 425...485
Speed
TORQUE CONTROL
Torque-control curve - 1st version
           1/min : 1050
1st speed
  C-rod trav.mm : 12.65...12.75
2nd speed 1/min : 750
C-rod trav.mm : 13.00...13.30
3rd speed 1/min : 650
  C-rod trav.mm : 13.15...13.25
FUEL-DELIVERY CHARACTERISTICS
Speed
            1/min : 750
Del.quantity cm3/: 142.0...148.0
1000H.: (141.0...149.0)
            1/min : 650
Speed
Del.quantity cm3/: 144.0
1000H.: (148.0)
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Remarks:

: CASE NO. A 148173

SD ang. spacing CS: 0-90-180-270 Tolerance + - 0.50(0.75) BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column BASIC SETTING Test sheet : CAS 5.5 A 2 : 26.2.87 Edition 1st speed 1/mi: 1100 Superceeded Calibrating oil : ISO-4113 Gontr.-rod trav.mm: 10.40 Combination no. : 9 400 230 034 Deliguantity cm3/: 10.5...10.7 Injection pump 100H.: (-) Pump designation : PES4A100D420LS3023 Governor cm3/:0.3Dispersion Governor design. : RSV425...1100A0B 2126R 100H.: (-) Customer-spec. information 1/min: 425 2nd speed Customer Contri-rod trav. m: 6.60 Del.quantity cm3/: 1.6...2.2 Engine : A 336 BDT 100H.: (-) cm3/: 0.3 100H.: (-) Dispersion TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C SLEEVE POSITION : 38...42 Control-lever position Degree: -3 17min: 800 Overflow valve Speed : 9 681 273 009 Cont.-rod travelmm: 0.30...0.70 FULL-LOAD DELIV. AT FULL-LOAD STOP Inlet press., bar : 1.5 Calibrating nozzle-holder 1st version : 0 681 343 009 assembly 1/min: 1100 Speed Del.quantity cm3/: 105.5...107.5 1000H:: (102.5...109.5) Opening pressure, bar : 172...175 HIGHEST RATED SPEED 1st version Test inj. tubing : 9 681 230 706 Control-lever position degrees: 39...47 Outside diameter x Wall thickness Testing: x Length mm : 6.00x2.00x600 1st c-rod trav.mm: 9.40 Speed 1/min: 1120...1130 (A) Injection pump setting values 2nd c-rod trav.mm : 4.00 Insp. values in parentheses Set constant delivery quant. Speed 1/min: 1205...1235 3rd c-rod trav.mm: 0.30...1.70 per values ____ 1/min : 1350 Speed START OF DELIVERY LOWEST RATED SPEED I Control-lever Prestroke mm : 2.0-2.1 position degrees: 23...31 : (1.95...2.15) Setting point w/out aux. spring Contr.-rod trav.mm: 10.5 1/min : 425 Cam sequence : 1-3-4-2 Contr.-rod trav.mm: 6.00...6.70 Testing: 1/min : 425 Speed C-rod trav.mm min: 6.50

C-rod trav.mm : 2.00 Speed 1/min : 535...595

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min: 1100
C-rod trav.mm: 10.35...10.45
2nd speed 1/min: 700
C-rod trav.mm: 11.65...11.95
3rd speed 1/min: 600

C-rod trav.mm : 12.45...12.55

FUEL-DELIVERY CHARACTERISTICS

Remarks:

: CASE NO.A 154548

| 1 | |
|---|--|
| BOSCH INJ. PUMP TEST SPECIFICATIONS | 270-315 Tolerance + - 0 : 0.50(0.75) |
| Note inst. in remarks column | BASIC SETTING |
| Test sheet : IHC 9.0 D Edition : 11.3.87 Superceeded : - Calibrating oil : ISO-4113 | 1st speed 1/mi: 1600 |
| Calibrating oil : ISO-4113 | Contrrod trav.mm: 12.80 |
| Combination no. : 9 400 230 036 | Del.quantity cm3/: 8.99.1 |
| Injection pump Pump designation : PES8A95D32ORS2619 | 100H.: (~) |
| Governor | Dispersion cm3/: 0.3 |
| Governor design.: RQV3251600AB1143R | 100H.: (-) |
| Customer-spec. information Customer : IHC | 2nd speed 1/min: 325 |
| Engine : D 9 L | Contrrod trav. m: 7.60 Del.quantity cm3/: 0.91.5 100H.: (-) |
| TEST BENCH REQUIREMENTS | Dispersion cm3/: 0.3 100H.: (-) |
| Calibrating-oil inlet temp. OC : 4045 | SLEEVE POSITION |
| Overflow valve : 1 417 413 019 | Control-lever position Degree: 6674 Speed 1/min: 1620 |
| Inlet press., bar : 2.5 | Controd travelmm: 15.2017.80 |
| Calibrating nozzle-holder assembly : 0 681 343 009 | FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version |
| Opening pressure, bar : 172175 | Speed 1/min: 1600 Del.quantity cm3/: 89.091.0 1000H.: (-) |
| Test inj. tubing : 1 680 750 008 | HIGHEST RATED SPEED 1st version Control-lever |
| Outside diameter | position degrees: 63.571.5 |
| x Length mm : 6.00x2.00x600 | Testing: 1st c-rod trav.mm : 11.80 |
| (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values | Speed 1/min: 16401650 2nd c-rod trav.mm: 4.00 Speed 1/min: 18201850 3rd c-rod trav.mm: 01.00 Speed 1/min: 1925 |
| START OF DELIVERY | LOWEST RATED SPEED I |
| Prestroke mm : 2.953.05 (2.903.10) | Control-lever position degrees: 816 |
| Contrrod trav.mm: 10.50 Cam sequence : 1-8-7-3-6-5-4-2 | Testing: Speed 1/min: 325 C-rod trav.mm min: 7.70 |
| SD ang. spacing ^o CS: 0-45-90-135-180-225- | Speed 1/min: 100 C-rod trav.mm: 9.30 C-rod trav.mm: 8.50 |
| 1 624 | |

Speed 1/min : 100 C-rod trav.mm : 2.00

1/min: 855...915 Speed

CONSTANT REGULATION

1/min: 370...450 Speed

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1600

C-rod trav.mm : 12.70...12.90 2nd speed 1/min : 1000 C-rod trav.mm : 12.70...12.90

SWITCH-OVER POINT

1/min : 210...270 Speed

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min: 1000 Del.quantity cm3/: 86.0 1000H.: (-)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS BASIC SETTING Note inst. in remarks column 1st speed 1/mi: 1400 Test sheet : IHC 9.0 E 3 : 11.3.87 Edition Contr.-rod trav.mm: 11.30 Superceeded Calibrating oil : ISO-4113 Del.quantity cm3/: 6.95...7.15 Combination no. : 9 400 230 038 100H.: (-) Injection pump Dispersion cm3/:0.3Pump designation : PES8A95D320RS2624 Governor 100H.: (0.6) : RQV325...1400AB1149R Governor design. 2nd speed 1/min: 325 Customer-spec. information Contri-rod trav. m: 7.10 Del.quantity cm3/: 0.9...1.5 Customer : IHC 100H.: (-) cm3/: 0.3 100H.: (0.55) Engine : D9 L Dispersion TEST BENCH REQUIREMENTS SLEEVE POSITION Control-lever position Calibrating-oil inlet temp. ^DC : 38...42 Degree: 67...71 17min: 1430 Speed Overflow valve Cont.-rod travelmm: 15.20...17.80 : 1 417 413 019 FULL-LOAD DELIV. AT FULL-LOAD STOP Inlet press., bar : 2.5.. 1st version Calibrating nozzle-holder 1/min: 1400 Speed : 0 681 343 009 Del.quantity cm3/: 69.5...71.5 1000H.: (67.5...73.5) assembly Opening pressure, bar : 172...175 HIGHEST RATED SPEED 1st version Control-lever Test inj. tubing : 1 680 750 008 position degrees: 62...70 Outside diameter Testing: x Wall thickness 1st c-rod trav.mm : 10.30 Speed 1/min: 1440...1450 : 6.00X2.00X600 x Length mm 2nd c-rod trav.mm : 4.00 Speed 1/min: 1545...1575 3rd c-rod trav.mm: 0...1.00 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. 1/min : 1620 Speed per values ____ LOWEST RATED SPEED I START OF DELIVERY Control-lever position degrees: 7...15 : 2.55...2.65 Prestroke mm : (2.50...2.70) Contr.-rod trav.mm: 10.50 Testing: Speed 1/min: 325 C-rod trav.mm min: 7.20 Cam sequence : 1-8-7-3-6-5-4-2 1/min : 100 Speed C-rod trav.mm : 9.10 C-rod trav.mm : 2.00 SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50(0.75) Speed 1/min: 620...680

G23

CONSTANT REGULATION

1/min : 370...450 Speed

SWITCH-OVER POINT

Speed 1/min: 170...250

FUEL-DELIVERY CHARACTERISTICS Speed 1/min: 800 Del.quantity cm3/: 59.0 1000H.: (63.0)

Remarks:

SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50(0.75) BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column BASIC SETTING : DEE 7.6 J 1 : 4.3.87 Test sheet Edition 1/mi: 1100 1st speed Superceeded Calibrating oil : ISO-4113 Contr.-rod trav.mm: 9.90 Combination no. : 9 400 230 046 Del.quantity cm3/: 9.10...9.30 Injection pump 100H.: (-) Pump designation : PES6A95D41ORS2561 Governor Dispersion cm3/:0.3Governor design. : RSV600...1100A2B 2048-1L 100H.: (-) Customer-spec. information 1/min: 600 2nd speed Customer : JOHN DEERE Contri-rod trav. m: 5.10 Del.quantity cm3/ : 1.2...1.6 : 6466 T 100H.: (-) Engine cm3/: 0.3 100H.: (-) Dispersion TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C SLEEVE POSITION : 38...42 Control-lever position Degree: -3 17min: 800 Overflow valve Speed : 1 413 385 007 Cont.-rod travelmm: 0.30...0.70 FULL-LOAD DELIV. AT FULL-LOAD STOP Inlet press., bar: 1.5 Calibrating nozzle-holder 1st version : 0 681 343 009 1/min: 1100 assembly Speed Del.quantity cm3/: 91.0...93.0 1000H.: (88.0...96.0) Opening pressure, bar : 172...175 HIGHEST RATED SPEED 1st version Control-lever Test inj. tubing : 1 680 750 008 position degrees: 44...52 Outside diameter x Wall thickness Testing: : 6.35x2.18x600 x Length mm 1st c-rod trav.mm : 8.90 Speed 1/min: 1145...1155 2nd c-rod trav.mm: 4.00 (A) Injection pump setting values 1/min : 1195...1225 Insp. values in parentheses Set constant delivery quant. Speed 3rd c-rod trav.mm : 0.30...1.70 per values ____ 1/min : 1300 Speed START OF DELIVERY LOWEST RATED SPEED I Control-lever : 1.85...1.95 position degrees: 24...32 Prestroke mm : (1.80...2.00) Contr.-rod trav.mm: 10.5 Testing: Cam sequence : 1-5-3-6-2-4 1/min: 600 Speed C-rod trav.mm min: 4.70 1/min : 600 Speed C-rod trav.mm : 5.00...5.20 C-rod trav.mm : 19.00

Speed 1/min : 100 C-rod trav.mm : 2.00 Speed 1/min : 745...805

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min: 1100
C-rod trav.mm: 9.90
2nd speed 1/min: 950
C-rod trav.mm: 10.75...10.95

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min; 950 Del.quantity cm3/: 104.0...108.0 1000H.: (102.0...110.0)

Remarks:

: JOHN DEERE NO.

: RE 10472

BOSCH INJ. PUMP TEST SPECIFICATIONS BASIC SETTING Note inst. in remarks column 1/mi: 1100 1st speed : CAS 8.3 K 4 : 4.3.87 Test sheet Edition Contr.-rod trav.mm: 11.35 Superceeded Calibrating oil : ISO-4113 Del.quantity cm3/: 9.60...9.80 : 9 400 230 051 Combination no. 100H.: (-) Injection pump Dispersion cm3/:0.3Pump designation : PES6A95D420LS2551 100H.: (0.6) Governor : RSV400...1100A0B2169 Governor design. 1/min: 400 2nd speed Contr.-rod trav. m: 7.30 Customer-spec. information Del.quantity cm3/: 1.70...2.30 : J I CASE Customer 100H.: (-) cm3/: 0.3 100H.: (0.55) : A 504 BD Dispersion Engine TEST BENCH REQUIREMENTS SLEEVE POSITION Calibrating-oil inlet temp. °C Control-lever position Degree: -3 1/min: 800 : 38...42 Speed Overflow valve Cont.-rod travelmm: 0.30...0.70 : 9 681 273 009 FULL-LOAD DELIV. AT FULL-LOAD STOP Inlet press., bar: 1.5 1st version Speed 1/min: 1100 Del.quantity cm3/: 96.0...98.0 1000H.: (94.0...100.0) Calibrating nozzle-holder : 0 681 343 009 assembly Opening pressure, bar : 172...175 HIGHEST RATED SPEED 1st version Control-lever Test inj. tubing : 9 681 230 706 position degrees: 36...44 Testing: Outside diameter x Wall thickness 1st c-rod trav.mm : 10.35 : 6.00x2.00.600 1/min : 1140...1150 Speed x Length mm 2nd c-rod trav.mm : 4.00 1/min: 1280...1340 Speed (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. 3rd c-rod trav.mm : 0.30...1.70 1/min : 1360 Speed per values ____ LOWEST RATED SPEED I START OF DELIVERY Control-lever position degrees: 20...28 : 2.20...2.30 Prestroke mm : (2.15...2.35) Testing: Contr.-rod trav.mm: 10.50 Speed 1/min: 400 Cam sequence : 1-5-3-6-2-4 C-rod trav.mm min : 6.70 1/min : 400 Speed C-rod trav.mm : 7.20...7.40 C-rod trav.mm : 19.00 SD ang. spacing $^{\circ}$ CS: 0-60-120-180-240-300 Tolerance + - $^{\circ}$: 0.50(0.75) 1/min : 100 Speed C-rod trav.mm : 2.00

G27

Speed 1/min : 670...730

Remarks:

: CASE NO. A-156304

SD ang. spacing 0 CS: 0-60-120-180-240-300 Tolerance + - 0 : 0.50(0.75) BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column BASIC SETTING Test sheet : DEE 7.6 I 1 : 4.3.87 Edition 1/mi: 1100 1st speed Superceeded Calibrating oil : ISO-4113 Contra-rod trav.mm: 10.00 Combination no. : 9 400 230 064 Del.quantity cm3/: 112...11.4 Injection pump 100H.: (-) Pump designation : PES6A100D410RS3040 Governor Discersion cm3/:0.3Governor design. : RSV400...1100A2B2160 100H.: (-) Customer-spec. information 2nd speed 1/min: 400 Contr.-rod trav. m: 5.00
Del.quantity cm3/: 1.2...1.8
100H.: (-)
Dispersion cm3/: 0.4(-) Customer : JOHN DEERE Engine : 6466T TEST BENCH REQUIREMENTS SLEEVE POSITION Calibrating-oil inlet temp. OC Control-lever position : 38...44 Degree: -3 17min: 800 Speed Cont.-rod travelmm: 0.30...1.00 Overflow valve : 1 457 413 010 FULL-LOAD DELIV. AT FULL-LOAD STOP Inlet press., bar: 1.5 1st version Speed 1/min: 1100 Calibrating nozzle-holder Charge press. hPa: 800 : 0 681 343 009 assembly Del.quantity cm3/: 111.5...113.5 1000H.: (109.5...115.5) Opening pressure, bar : 172...175 HIGHEST RATED SPEED 1st version Test inj. tubing : 9 681 230 706 Control-lever position degrees: 61...69 Outside diameter x Wall thickness Testing: x Length mm : 6.00x2.00x600 1st c-rod trav.mm : 9.00 Speed 1/min: 1140...1150 2nd c-rod trav.mm : 4.00 (A) Injection pump setting values Speed 1/min: 1185...1215 3rd c-rod trav.mm: 0.30...1.70 Insp. values in parentheses Set constant delivery quant. per values ____ Speed 1/min : 1300 START OF DELIVERY LOWEST RATED SPEED I Control-lever Prestroke mm : 1.95...2.05 position degrees: 16...24 : (1.90...2.10) Contr.-rod trav.mm: 10.50 Testing: Cam sequence : 1-5-3-6-2-4 1/min : 400 Speed C-rod trav.mm min: 4.40 Speed 1/min: 400 C-rod trav.mm : 4.90...5.10 C-rod trav.mm : 19.00 **HO1**

Speed 1/min: 100
C-rod trav.mm : 2.00
Speed 1/min: 450...510

TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min: 1100
C-rod trav.mm : 10.00
2nd speed 1/min: 750
C-rod trav.mm : 10.45...10.75

FUEL-DELIVERY CHARACTERISTICS

1st version
Charge press. hPa: 800
Speed 1/min: 750
Del.quantity cm3/: 114.0...120.0
1000H.: (113.0...121.0)

Charge press. hPa : -

Speed 1/min: 500 Del.quantity cm3/: 87.0...91.0 1000H.: (85.0...93.0)

Remarks:

: JOHN DSEERE NO. RE

: 13406

H02

SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50(0.75) BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column BASIC SETTING Test sheet : DEE 7.6 H10 : 4.3.87 Edition 1st speed 1/mi: 1000 Superceeded Calibrating oil : ISO-4113 Contr.-rod trav.mm: 11.60 : 9 400 230 069 Combination no. Del.quantity cm3/: 12.2...12.4 Injection pump 100H.: (-) Pump designation : PES6A100D410RS2676-1 cm3/: 0.35Governor Dispersion : RSV450...1...A1B2186 Governor design. 100H.: (0.6) Customer-spec. information 2nd speed 1/min: 450 Customer : JOHN DEERE Contr.-rod trav. m: 6.00 Del.quantity cm3/: 1.8...2.2 Engine : 6466 A 100H.: (-) cm3/: 0.35 100H.: (0.55) Dispersion TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. C SLEEVE POSITION : 38...42 Control-lever position Degree: -3 1/min: 800 Overflow valve Speed : 1 457 413 010 Cont.-rod travelmm: 0.30...0.70 FULL-LOAD DELIV. AT FULL-LOAD STOP Inlet press., bar: 1.5 Calibrating nozzle-holder 1st version : 0 681 343 009 assembly 1/min: 1000 Speed Del.quantity cm3/: 121.5...123.5 1000H.: (119.5...125.5) Opening pressure, bar : 172...175 HIGHEST RATED SPEED 1st version Control-lever Test inj. tubing : 9 681 230 706 position degrees: 46...54 Outside diameter x Wall thickness Testing: : 6.00x2.00x600 1st c-rod trav.mm: 10.60 x Length mm 1/min : 1045...1055 Speed 2nd c-rod trav.mm: 4.00 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. 1/min : 1085...1115 Speed 3rd c-rod trav.mm: 0.30...1.70 per values ____ 1/min : 1150 START OF DELIVERY LOWEST RATED SPEED I Control-lever : 2.45...2.55 position degrees: 21...29 Prestreke mm : (2.50...2.69) Contr.-rod trav.mm: 10.50 Testing: Cam sequence : 1-5-3-6-2-4 1/min: 450 Speed C-rod trav.mm min: 5.40 Speed 1/min: 450 C-rod trav.mm: 5.90...6.10 C-rod trav.mm : 2.00

Speed 1/min : 560...620

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min: 1000 C-rod trav.mm: 11.60 2nd speed 1/min: 700 C-rod trav.mm: 12.60...12.80

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 700

Del.quantity cm3/: 132.0...135.0 1000H.: (129.5...137.5)

Remarks:

: JOHN DEERE NO. RE

SD ang. spacing 0 CS: 0-60-120-180-240-300 Tolerance + - 0 : 0.50(0.75) BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column BASIC SETTING Test sheet : CUM 8.3 A 4 Edition : 12.3.87 1/mi: 1100 1st speed Superceeded Contr.-rod trav.mm: 12.10...12.30 Calibrating oil : ISO-4113 Combination no. : 9 400 230 073 Del.quantity cm3/: 10.9...11.1 Injection pump 100H.: (-) Pump designation : PES6A100D320/3RS2691 Governor Dispersion cm3/: 0.35Governor design. : RSV425...1100A2C2190 100H.: (0.6) Customer-spec. information 2nd speed 1/min: 425 Contr.-rod trav. m: 5.70...5.90 Customer : CUMMINS Del.quantity cm3/: 1.6...2.0 100H.: (-) cm3/: 0.35 100H.: (0.55) : 6 CT-830 Engine Dispersion TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C SLEEVE POSITION : 38...42 Control-lever position Degree: -3 1/min: 800 Overflow valve Speed : 0 417 413 047 Cont.-rod travelmm: 0.30...0.70 Inlet press., bar: 1.4 FULL-LOAD DELIV. AT FULL-LOAD STOP Calibrating nozzle-holder 1st version Speed 1/min: 1100 Del.quantity cm3/: 109.0...111.0 assembly : 1 688 901 016 1000H.: (107.0...113.0) Opening pressure, bar : 207...210 HIGHEST RATED SPEED 1st version Control-lever Test inj. tubing : 1 680 750 014 position degrees: 41...49 Outside diameter x Wall thickness Testing: : 6.00x2.00x600 1st c-rod trav.mm : 11.20 x Length mm 1/min : 1140...1150 2nd c-rod trav.mm : 4.00 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. 1/min : 1180...1210 Speed 3rd c-rod trav.mm : +4.00 1/min : 1195...1225 per values Speed 1/min: 1300 4th speed START OF DELIVERY C-rod trav.mm : 0.30...1.40 : 2.80...2.90 LOWEST RATED SPEED I Prestroke mm : (2.75...2.95) Control-lever position degrees: 17...25 Contr.-rod trav.mm: 10.50 Cam sequence : 1-5-3-6-2-4 Testing: Speed 1/min : 425 C-rod trav.mm min : 5.40 1/min : 425 Speed

C-rod trav.mm : 5.70...5.90 C-rod trav.mm : 19.00 Speed 1/min : 100 C-rod trav.mm : 2.00 Speed 1/min : 470...530

Remarks:

SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50(0.75) BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column BASIC SETTING Test sheet : CUM 8.3 A 3 : 12.3.87 Edition 1st speed 1/mi: 1050 Superceeded Calibrating oil : ISO-4113 Contr.-rod trav.mm: 11.70...11.80 Combination no. : 9 400 230 093 Del.quantity cm3/: 8.95...9.15 Injection pump 100H.: (-) Pump designation : PES6A100D320/3RS2691 Governor Dispersion cm3/: 0.35: RSV425...1050A2C2190 Governor design. 100H.: (-) -6R Customer-spec. information 2nd speed 1/min: 425 Contr.-rod trav. m: 6.50...6.70 Customer : CUMMINS Del.quantity cm3/ : (1.6...2.0) 100H.: (-) Engine : 6 CTA-830 cm3/: 0.35 100H.: (-) Dispersion TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. C SLEEVE POSITION : 38...42 Control-lever position Degree: -3 1/min: 800 Overflow valve Cont.-rod travelmm: 0.30...0.70 : 1 417 413 047 FULL-LOAD DELIV. AT FULL-LOAD STOP Inlet press., bar : 1.4 Calibrating nozzle-holder 1st version : 1 688 901 016 1/min: 1050 assembly Speed Del.quantity cm3/: 89..5...91.5 1000H.: (87.5...93.5) Opening pressure, bar : 207...210 HIGHEST RATED SPEED 1st version Control-lever Test inj. tubing : 9 680 271 029 position degrees: 42...50 Outside diameter x Wall thickness Testing: : 6,00x2,00x600 1st c-rod trav.mm : 10.70 x Length mm 1/min: 1090...1100 Speed 2nd c-rod trav.mm : 4.00 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. 1/min : 1160...1190 Speed 3rd c-rod trav.mm : 0.30...1.40 1/min : 1250 Speed per values ____ START OF DELIVERY LOWEST RATED SPEED I Control-lever : 2.80...2.90 position degrees: 20..28 Prestroke mm : (2.75...2.95) Contr.-rod trav.mm: 10.50 Testing: Cam sequence : 1-5-3-6-2-4 1/min : 425 Speed C-rod trav.mm min : 6.20 Speed 1/min: 425 C-rod trav.mm : 6.50...6.70 C-rod trav.mm : 19.00

Speed 1/min : 100
C-rod trav.mm : 2.00
Speed 1/min : 500...560

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min: 1050
C-rod trav.mm: 11.70...11.80
2nd speed 1/min: 750
C-rod trav.mm: 13.30...13.50

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min: 750
Del.quantity cm3/: 111.5...115.5
1000H.: (109.0...118.0)

Remarks:

SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - 0.50(0.75) BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column BASIC SETTING Test sheet : CUM 8.3 A 2 : 4.3.87 Edition 1st speed 1/mi: 1100 Superceeded Calibrating oil : ISO-4113 Contr.-rod trav.mm: 12.80...12.90 Combination no. : 9 400 230 098 Del.quantity cm3/: 11.4...11.6 Injection pump 100H.: (-) Pump designation : PES6A100D320/3RS2691 Governor cm3/:0.35Dispersion Governor design. : RSV425...1100A2C2190 100H.: (0.6) Customer-spec. information 2nd speed 1/min: 425 Contr.-rod trav. m: 5.30...5.50 Del.quantity cm3/: 1.30...1.70 Customer : CUMMINS 100H.: (-) Engine : 6CTA 8.3 cm3/: 0.35 100H.: (0.55) Dispersion TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. OC SLEEVE POSITION : 38...42 Control-lever position Degree: -3 1/min: 800 Overflow valve Speed : 1 417 413 047 Cont.-rod travelmm: 0.30...0.70 FULL-LOAD DELIV. AT FULL-LOAD STOP Inlet press., bar: 1.5 Calibrating nozzle-holder 1st version assembly : 1 688 901 016 Speed 1/min: 1100 Del.quantity cm3/: 113.5...115.5 1000H.: (111.5...117.5) Opening pressure, bar : 207...210 HIGHEST RATED SPEED 1st version Test inj. tubing : 9 681 271 029 Control-lever position degrees: 38...46 Outside diameter x Wall thickness Testing: : 6.00X2.00X600 1st c-rod trav.mm : 11.80 x Length mm 1/min : 1140...1150 Speed 2nd c-rod trav.mm : 4.00 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. 1/min: 1190...1220 Speed 3rd c-rod trav.mm: 4.00 Speed 1/min: 1200...1230 th speed 1/min: 1300 C-rod trav.mm: 0.30...1.40 per values ____ 4th speed START OF DELIVERY : 2.80...2.90 LOWEST RATED SPEED I Prestroke mm : (2.75...2.95) Control-lever Contr.-rod trav.mm: 10.50 position degrees: 15...23 Cam sequence : 1-5-3-6-2-4 Testing: 1/min: 425 Speed C-rod trav.mm min : 4.80 1/min : 425 Speed

C-rod trav.mm : 5.30...5.50 C-rod trav.mm : 19.00 Speed 1/min : 100 C-rod trav.mm : 2.00 Speed 1/min : 470...530

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS BASIC SETTING Note inst. in remarks column 1st speed 1/mi: 950 Test sheet : IHC 13.4 E2 Edition : 6.3.87 Contr.-rod trav.mm: 11.30 Superceeded Calibrating oil : ISO-4113 Del.guantity cm3/: 19.7...19.9 : 9 400 231 003 100H.: (-) Combination no. Injection pump Dispersion cm3/:0.4Pump designation : PES6P110A420LS3037 Governor 100H.: (-) Governor design. : RSV350...950P2/455DR 2nd speed 1/min: 350 Contr.-rod trav. m: 4.50
Del.quantity cm3/: 2.0...2.5
100H.: (-)
Dispersion cm3/: 0.65
100H.: (-) Customer-spec. information Customer : IHC Engine : DTI-817 B TEST BENCH REQUIREMENTS SLEEVE POSITION Calibrating-oil inlet temp. OC Control-lever position : 38...42 Degree: -3 17min: 800 Speed Cont.-rod travelmm: 0.30...0.70 Overflow valve : 1 417 413 040 FULL-LOAD DELIV. AT FULL-LOAD STOP Inlet press., bar: 1.5 1st version 1/min: 950 Calibrating nozzle-holder Speed : 1 688 901 016 Charge press. hPa: 1100 assembly Del.quantity cm3/: 197.0...199.0 1000H.: (-) Opening : 206 pressure, bar HIGHEST RATED SPEED 1st version Control-lever Test inj. tubing : 9 681 239 040 position degrees: 41...49 Outside diameter x Wall thickness Testing: : 8.00x2.50x750 1st c-rod trav.mm: 10.30 x Length mm 1/min: 990...1000 Speed 2nd c-rod trav.mm: 4.00 (A) Injection pump setting values Speed 1/min: 1045...1075 Insp. values in parentheses 3rd c-rod trav.mm: 0.30...1.70 Set constant delivery quant. per values Speed 1/min : 1300 LOWEST RATED SPEED I START OF DELIVERY Control-lever : 2.00...2.10 : (1.95...2.15) Prestroke mm position degrees: 21...29 Contrarod trav.mm: 11.30 Testing: Cam sequence : 1-5-3-6-2-4 1/min : 350 Speed C-rod trav.mm min: 4.90 1/min : 150 Speed C-rod trav.mm : 20.00...21.00 C-rod trav.mm : 2.00 SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50(0.75) Speed 1/min: 360...420 H11

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS 1st speed 1/mi: 1050 Contr.-rod trav.mm: 13.00 Note inst. in remarks column Test sheet : DEE 10.1 D1 Del.quantity cm3/: 18.6...19.0 Edition : 4.3.87 Superceeded 100H.: (-) Calibrating oil : ISO-4113 Dispersion cm3/:0.4: 9 400 231 004 Combination no. 100H.: (-) Injection pump 1/min: 400 Pump designation : PES6P110A720RS296 2nd speed Contr.-rod trav. m: 6.50 Governor Del.quantity cm3/: 1.8...2.6 100H.: (-) : RSV400...1050P0/443 Governor design. SLEEVE POSITION Customer-spec. information Customer : JOHN DEERE Control-lever position Degree: -3 1/min: 800 Engine : 6619 A Speed Cont.-rod travelmm: 0.30...0.70 TEST BENCH REQUIREMENTS FULL-LOAD DELIV. AT FULL-LOAD STOP Calibrating-oil inlet temp. °C : 38...42 1st version 1/min: 1050 Speed Del.quantity cm3/: 186...190 1000H.: (-) Overflow valve : 1 457 413 010 HIGHEST RATED SPEED Inlet press., bar : 1.5 1st version Calibrating nozzle-holder Control-lever : 0 681 343 009 assembly position degrees: 36...44 Testing: Opening. pressure, bar : 172...175 1st c-rod trav.mm : 12.00 Speed 1/min : 1095...1105 2nd c-rod trav.mm: 6.00 1/min : 1135...1165 Speed Test inj. tubing : 1 680 750 015 3rd e-rod trav.mm: 0.30...1.30 Speed 1/min : 1300 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. LOWEST RATED SPEED I per values ____ Control-lever position degrees: 18...26 START OF DELIVERY Testing: : 2.75...2.85 1/min : 400 Prestroke mm Speed C-rod trav.mm min: 6.40 : (2.70...2.90) Contr.-rod trav.mm: 13.00 1/min : 100 Speed Cam sequence : 1-5-3-6-2-4 C-rod trav.mm : 19.00...21.00 : 6.50 C-rod trav.mm 1/min: 400 mm: 2.00 Speed C-rod trav.mm SD ang. spacing $^{\circ}$ CS: 0-60-120-180-240-300 Tolerance + - $^{\circ}$: 0.50(0.75) 1/min: 520...589 Speed TORQUE CONTROL BASIC SETTING Torque-control curve - 1st version 1st speed 1/min: 1050 H13

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C-rod trav.mm : 13.00 2nd speed 1/min: 630 C-rod trav.mm : 13.75...13.85

SWITCH-OVER POINT

Speed 1/min: 450...750

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min: 630
Del.quantity cm3/: 201.0...205.0
1000H.: (-)
Speed 1/min: 550
Del.quantity cm3/: 113.0...119.0
1000H.: (-)

Remarks:

: JOHN DEERE NO. AR

BOSCH INJ. PUMP TEST SPECIFICATIONS BASIC SETTING Note inst. in remarks column 1st speed 1/mi: 890 Test sheet : DEE 10.1 A4 : 4.3.87 Edition Contr.-rod trav.mm: 13.10 Superceeded Del.quantity cm3/: 18.5...18.7 Calibrating oil : ISO-4113 : 9 400 231 005 Combination no. 100H.: (-) cm3/:0.4Injection pump Dispersion Pump designation : PES6P110A720RS370 Governor 100H.: (-) Governor design. : RSV400...900P7/449DR SLEEVE POSITION Customer-spec. information Control-lever position Degree: -3 : JOHN DEERE Customer 1/min: 800 Speed : 6619 A Cont.-rod travelmm: 0.30...0.70 Engine FULL-LOAD DELIV. AT FULL-LOAD STOP TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C 1st version : 38...42 1/min: 890 Speed Del.quantity cm3/: 185.0...187.0 1000H.: (-) Overflow valve : 1 457 413 010 HIGHEST RATED SPEED Inlet press., bar: 1.5 1st version Control-lever Calibrating nozzle-holder position degrees: 49.5...57,5 : 0 681 343 009 assembly Testing: Opening 1st c-rod trav.mm : 12.10 pressure, bar : 172...175 Speed 1/min: 915...925 2nd c-rod trav.mm : 4.00 1/min: 950...980 Speed 3rd c-rod trav.mm : 0.30...1.70 Test inj. tubing : 1 680 750 015 Speed 1/min : 1030 Outside diameter LOWEST RATED SPEED I x Wall thickness x Length mm : 6.00x1.50x600 Control-lever position degrees: 21.5...29.5 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. Testing: 1/min: 400 Speed per values C-rod trav.mm min : 6.30 1/min : 100 Speed : 19.00 START OF DELIVERY C-rod trav.mm : 2.00 C-rod trav.mm : 2.75...2.85 1/min : 485...545 Prestroke mm Speed : (2.70...2.90) Contr.-rod trav.mm: 10.50 1/min : 560 Speed C-rod trav.mm max: 1.00 Cam sequence : 1-5-3-6-2-4 SD ang. spacing 0 CS: 0-60-120-180-240-300 Tolerance + - 0 : 0.50(0.75) Remarks:

H15

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DEE 10.1 A5

Edition : 4.3.87 Superceeded

Calibrating oil : ISO-4113

Combination no. : 9 400 231 006

Injection pump

Pump designation : PES6P110A720RS370

Governor

Governor design. : RSV400...1050P0/450

Customer-spec. information

: JOHN DEERE Customer

Engine : 6619 A

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. C

: 38...42

Overflow valve

: 1 457 413 010

Inlet press., bar: 1.5

Calibrating nozzle-holder

assembly : 0 681 343 009

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter x Wall thickness

: 6.00x1.50x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

START OF DELIVERY

Prestroke mm : 2.75...2.85

: (2.70...2.90)

Contr.-rod trav.mm: 12.20 Cam sequence : 1-5-3-6-2-4

SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50(0.75) BASIC SETTING 1st speed 1/mi: 1050 Contr.-rod trav.mm: 12.20 Del.quantity cm3/: 17.2...17.4 100H.: (-) Dispersion cm3/:0.4100H.: (-) 1/min: 400 2nd speed Contri-rod trav. m: 6.40 Del.quantity cm3/: 1.9...2.5 100H.: (-) SLEEVE POSITION Control-lever position Degree: -3 1/min: 800 Speed Cont.-rod travelmm: 0.30...0.70 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version 1/min: 1050 Speed Del.quantity cm3/: 172.0...174.0 1000H.: (169.0...177.0) HIGHEST RATED SPEED 1st version Control-lever position degrees: 36...44 Testing: 1st c-rod trav.mm : 11.20 Speed 1/min: 1100 2nd c-rod trav.mm: 6.20 1/min : 1150 Speed LOWEST RATED SPEED I Control-lever position degrees: 15...23 Testing: Speed 1/min : 400 C-rod trav.mm min: 6.30 1/min : 100 Speed : 19.00...21.00 C-rod trav.mm : 6.40 C-rod trav.mm Speed 1/min: 400 : 2.00 C-rod trav.mm 1/min : 520...580 Speed

TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min: 1050
 C-rod trav.mm: 12.20
2nd speed 1/min: 650
 C-rod trav.mm: 12.60

SWITCH-OVER POINT
Speed 1/min: 450...500

FUEL-DELIVERY CHARACTERISTICS
Speed 1/min: 650
Del.quantity cm3/: 177.4...180.4
 1000H.: (174.4...183.4)
Speed 1/min: 550
Del.quantity cm3/: 84.0...92.0
1000H.: (81.0...95.0)

Remarks:

: JOHN DEERE NO. AR : 88761

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H17

SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50(0.75) BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column BASIC SETTING Test sheet : DEE 10.1 A6 : 4.3.87 Edition 1/mi: 1050 1st speed Superceeded Calibrating oil : ISO-4113 Contr.-rod trav.mm: 11.95...12.05 Combination no. : 9 400 231 007 Del.quantity cm3/: 16.4...16.6 Injection pump 100H.: (-) Pump designation : PES6P110A720RS370 Governor cm3/:0.4Dispersion Governor design. : RSV400...1050P0/451 100H.: (-) 2nd speed Customer spec. information 1/min: 400 Contr.-rod trav. m: 6.30 Del.quantity cm3/: 1.7...2.3 Customer : JOHN DEERE 100H.: (-) Engine : 6619 A TEST BENCH REQUIREMENTS SLEEVE POSITION Control-lever position Calibrating-oil inlet temp. C Degree: -3 1/min: 800 : 38...42 Speed Cont.-rod travelmm: 0.30...0.70 Overflow valve : 1 457 412 010 FULL-LOAD DELIV. AT FULL-LOAD STOP Inlet press., bar : 1.5 1st version Speed 1/min: 1050 Del.quantity cm3/: 164.6...166.6 1000H.: (161.6...169.6) Calibrating nozzle-holder : 0 681 343 009 assembly Opening HIGHEST RATED SPEED pressure, bar : 172...175 1st version Control-lever position degrees: 38...46 Test inj. tubing : 1 680 750 015 Testing: Outside diameter 1st c-rod trav.mm : 11.00 x Wall thickness 1/min : 1095...1105 : 6.00x1.50x600 x Length mm LOWEST RATED SPEED I (A) Injection pump setting values Contro@-lever Insp. values in parentheses Set constant delivery quant. position degrees: 15...23 per values ____ Testing: Speed 1/min: 400 START OF DELIVERY C-rod trav.mm min: 6.30 1/min : 100 Speed C-rod trav.mm : 19.00...21.00 C-rod trav.mm : 2.00 Prestroke mm : 2.75...2.85 : (2.70...2.90) Contr.-rod trav.mm: 11.95...12.05 Cam sequence : 1-5-3-6-2-4 1/min: 520...580 Speed TORQUE CONTROL Torque-control curve - 1st version 1/min : 1050 1st speed C-rod trav.mm : 11.95...12.05 H19

2nd speed 1/min : 650 C-rod trav.mm : 12.30...12.40

SWITCH-OVER POINT

1/min : 400...750 Speed

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min : 650

Del.quantity cm3/: 169.0...172.0 1000H.: (166.0...175.0) Speed 1/min: 550 Del.quantity cm3/: 91.0...97.0 1000H.: (-)

Remarks:

: JOHN DEERE NO. AR

SD ang. spacing⁰CS: 0-60-120-180-240-300 Tolerance + - : 0.50(0.75) BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column. BASIC SETTING Test sheet : DEE 10.1 A8 : 5.3.87 Edition 1/mi: 1050 1st speed Superceeded Calibrating oil : ISO-4113 Contr.-rod trav.mm: 13.10 Del.quantity cm3/: 18.3...18.5 Combination no. : 9 400 231 009 Injection pump 100H.: (-) Pump designation : PES6P110A720R\$370 Governor Dispersion cm3/:0.4: RSV400...1050P0/453 Governor design. 100H.: (-) Customer-spec. information 2nd speed 1/min: 400 Customer : JOHN DEERE Contr.-rod trav. m: 6.50 Del.quantity cm3/: 1.8...2.6 100H.: (-) Engine : 6619 A TEST BENCH REQUIREMENTS SLEEVE POSITION Control-lever position Calibrating-oil inlet temp. OC Degree: -3 1/min: 800 : 38...42 Speed Cont.-rod travelmm: 0.30...0.70 Overflow valve : 1 457 413 010 FULL-LOAD DELIV. AT FULL-LOAD STOP Inlet press., bar : 1.5 1st version 1/min: 1050 Speed Del.quantity cm3/: 183...185 Calibrating nozzle-holder assembly : 0 681 343 009 1000H.: (180...188) Opening HIGHEST RATED SPEED pressure, bar : 172...175 1st version Control-lever position degrees: 35...43 Test inj. tubing : 1 680 750 015 Testing: Outside diameter 1st c-rod trav.mm : 12.10 Speed 1/min: 1095...1105 x Wall thickness 2nd c-rod trav.mm: 6.20 x Length mm : 6.00x1.50x600 Speed 1/min: 1135...1165 3rd c-rod trav.mm: 0.30...1.30 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. 1/min : 1300 Speed per values ____ LOWEST RATLS SPEED I Control-lever START OF DELIVERY position degrees: 16...24 : 2.75...2.85 Prestroke mm Testing: : (2.70...2.90) Speed 1/min: 400 Contr.-rod trav.mm: 13.10 C-rod trav.mm min: 6.40 Cam sequence : 1-6-3-6-2-4 Speed 1/min : 100 C-rod trav.mm : 19.00...21.00 C-rod trav.mm : 6.50 1/min : 400 Speed C-rod trav.mm : 2.00 H21

Speed 1/min: 520...580

TORQUE CONTROL

Torque-control curve - 1st version 1st speed 1/min: 1050 C-rod trav.mm: 13.10 2nd speed 1/min: 630 C-rod trav.mm: 13.90

SWITCH-OVER POINT

1/min: 450...750 Speed

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min: 630
Del.quantity cm3/: 201.0...204.0
1000H.: (198.5...207.5)
Speed 1/min: 550
Del.quantity cm3/: 113.0...119.0
1000H.: (110.0...122.0)

Remarks:

: JOHN DEERE NO. AR

SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50(0.75) BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column BASIC SETTING : DEE 7.6 A 7 Test sheet Edition : 5.3.87 1/mi: 1050 1st speed Superceeded Calibrating oil : ISO-4113 Contr.-rod trav.mm: 11.50 Combination no. : 9 400 231 010 Del.quantity cm3/: 15.0...15.2 Injection pump 100H.: (-) Pump designation : PES6P110A720RS361 Governor Dispersion cm3/:0.4Governor design. : RSV400...1050P2/454 100H.: (-) Customer-spec. information 1/min: 400 2nd speed Contr.-rod trav. m: 6.20 Del.quantity cm3/: 1.2...1.8 100H.: (-) Customer : JOHN DEERE : 6466 A Engine TEST BENCH REQUIREMENTS SLEEVE POSITION Control-lever position Calibrating-oil inlet temp. °C Degree: -3 : 38...42 17min: 800 Speed Cont.-rod travelmm: 0.30...0.70 Overflow valve : 1 457 413 010 FULL-LOAD DELIV. AT FULL-LOAD STOP Inlet press., bar : 1.5 1st version 1/min: 1050 Speed Del.quantity cm3/: 150.0...152.0 1000H.: (147.0...155.0) Calibrating nozzle-holder : 0 681 343 009 assembly HIGHEST RATED SPEED Opening : 172...175 pressure, bar 1st version Control-lever position degrees: 40...48 : 1 680 750 015 Test inj. tubing Testing: Outside diameter 1st c-rod trav.mm : 10.50 Speed 1/min: 1100 x Wall thickness 2nd c-rod trav.mm: 7.30 x Length mm : 6.00X1.50X600 1/min : 1150 Speed (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. LOWEST RATED SPEED I Control-lever per values ____ position degrees: 17...25 START OF DELIVERY Testing: Speed 1/min : 400 : 2.75...2.85 C-rod trav.mm min : 6.10 Prestroke mm Speed 1/min: 100 C-rod trav.mm: 19.00...21.00 C-rod trav.mm: 2.00 (2.70...2.90)
Contr.-rod trav.mm: 11.50 Cam sequence : 1-5-3-6-2-4 1/min: 570...630 Speed TORQUE CONTROL Torque-control curve - 1st version

1st speed 1/min : 1050 C-rod trav.mm : 11.50 2nd speed 1/min : 650

C-rod trav.mm : 12.25...12.35

SWITCH-OVER POINT

1/min : 350...450 Speed

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min: 650
Del.quantity cm3/: 162.0...166.0
1000H.: (159.0...169.0)
Speed 1/min: 500
Del.quantity cm3/: 74.0...80.0
1000H.: (71.0...83.0)

Remarks:

: JOHN DEERE NO. AR

BOSCH INJ. PUMP TEST SPECIFICATIONS BASIC SETTING Note inst. in remarks column 1st speed 1/mi: 890 Test sheet : DEE 7.6 A 8 Edition : 5.3.87 Contr.-rod trav.mm: 11.50 Superceeded Calibrating oil : ISO-4113 Del.quantity cm3/: 15.9...16.1 Combination no. : 9 400 231 011 100H.: (-) Injection pump cm3/:0.4Dispersion Pump designation : PES6P110A720RS361 Governor 100H.: (-) Governor design. : RSV400...900P7/455DR SLEEVE POSITION Control-lever position Customer-spec. information : JOHN DEERE Customer Degree: -3 17min: 800 Speed Engine : 6466 A Cont.-rod travelmm: 0.30...0.70 TEST BENCH REQUIREMENTS FULL-LOAD DELIV. AT FULL-LOAD STOP Calibrating-oil inlet temp. C 1st version : 38...42 Speed 1/min: 890 Del.quantity cm3/: 159.0...161.0 1000H.: (155.0...165.0) Overflow valve : 1 457 413 010 HIGHEST RATED SPEED Inlet press., bar: 1.5 1st version Control-lever Calibrating nozzle-holder position degrees: 50...58 : 0 681 343 009 assembly Testing: 1st c-rod trav.mm : 10.50 Opening Speed 1/min: 915...925 2nd c-rod trav.mm: 4.00 pressure, bar : 172...175 1/min: 950...980 Speed 3rd c-rod trav.mm : 0.30...1.70 Test inj. tubing : 1 680 750 015 Speed 1/min: 1030 Outside diameter x Wall thickness LOWEST RATED SPEED I : 6.00x1.50x600 x Length mm Control-lever position degrees: 22...30 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. Testing: Speed 1/min : 400 per values ____ C-rod trav.mm min: 6.10 Speed 1/min: 100 C-rod trav.mm: 19.00 C-rod trav.mm: 1.00 START OF DELIVERY Speed 1/min : 560 Prestroke mm : 2.75...2.85 : (2.70...2.90) Contr.-rod trav.mm: 11.50 Cam sequence : 1-5-3-6-2-4 Remarks:

SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - 0.50(0.75)

H25

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test_sheet : DEE 7.6 A 9

Edition : 5.3.87

Superceeded Calibrating oil : ISO-4113

Combination no. : 9 400 231 012

Injection pump

: PES6P110A720RS361 Pump designation

Governor

: RSV400...1100P2/456 Governor design.

Customer-spec. information

: JOHN DEERE Customer

: 6466 A Engine

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 38...42

Overflow valve

: 1 457 413 010

Inlet press., bar : 1.5

Calibrating nozzle-holder

: 0 681 343 009 assembly

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter

x Wall thickness

x Length mm : 6.00X1.50.6000

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

START OF DELIVERY

: 2.75...2.85 Prestroke mm : (2.70...2.90)

Contr.-rod trav.mm: 11.30

Cam sequence : 1-5-3-6-2-4

SD ang. spacing $^{\circ}$ CS: 0-60-120-180-240-300 Tolerance + - $^{\circ}$: 0.50(0.75) BASIC SETTING 1/mi: 1100 1st speed Contra-rod trav.mm: 11.30 Del.quantity cm3/: 15.0...15.2 100H.: (-) Dispersion *m3/:0.4100H.: (-) 2nd speed 1/min: 400 Contr.-rod trav. m: 5.60 Del.quantity cm3/: 0.9...1.2 100H.: (-) SLEEVE POSITION Control-lever position Degree: -3 Speed 17min: 800 Cont.-rod traveimm: 0.30...0.70 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version Speed 1/min: 1100 Del.quantity cm3/: 150.0...152.0 1000H.: (147.0...155.0) HIGHEST RATED SPEED 1st version Control-lever position degrees: 41...49 Testing: 1st c-rod trav.mm: 10.30 Speed 1/min: 1150 2nd c-rod trav.mm : 6.50 Speed 1/min : 1200 LOWEST RATED SPEED I Control-lever position degrees: 17...25 Testing: 1/min : 400 Speed C-rod trav.mm min : 5.50 1/min : 100 Speed C-rod trav.mm : 19.00...21.00 C-rod trav.mm : 2.00 1/min : 570...630 Speed

TORQUÉ CONTROL

H27

Torque-control curve - 1st version

1st speed 1/min: 1100 C-rod trav.mm : 11.30 2nd speed 1/min: 650 C-rod trav.mm : 11.60

SWITCH-OVER POINT

1/min: 400...750 Speed

FUEL DELIVERY CHARACTERISTICS

Speed 1/min: 650
Del_quantity cm3/: 153.5...156.5
1000H.: (150.5...159.5)
Speed 1/min: 550

Del.quantity cm3/: 90.0...96.0

1000H.: (87.0...99.0)

Remarks:

: JOHN DEERE NO. AR

SD ang. spacing 0 CS: 0-60-120-180-240-300 Tolerance + - $^{\circ}$: 0.50(0.75) BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column BASIC SETTING : DEE 10.1 E : 2.3.87 Test sheet 1/mi: 1050 Edition 1st speed Superceeded Calibrating oil : ISO-4113 Contra-rod trav.mm: 10.20 Combination no. : 9 400 231 013 Del.quantity cm3/: 13.5 100H.: (13.7) Injection pump : PES6P110A720RS379 Pump designation Governor Dispersion cm3/:0.4Governor design. : RSV400...1050P0/457 100H.: (-) Customer-spec. information 2nd speed 1/min: 400 : JOHN DEERE Contr.-rod trav. m: 6.00 Customer Del.quantity cm3/: 2.08 100H.: (2.68) Engine : 6619 T SLEEVE POSITION TEST BENCH REQUIREMENTS Control-lever position Calibrating-oil inlet temp. C Degree: -3 1/min: 800 : 38 ... 42 Cont.-rod travelmm: 0.30...0.70 Overflow valve : 1 457 413 010 FULL-LOAD DELIV. AT FULL-LOAD STOP Inlet press., bar: 1.5 1st version 1/min: 1050 Speed Del.quantity cm3/: 135.0...137.0 1000%1: (132.0...140.0) Calibrating nozzle-holder : 0 681 343 009 assembly HIGHEST RATED SPEED Opening pressure, bar : 172...175 1st version Control-lever position degrees: 35...43 Test inj. tubing : 1 680 750 015 Testing: Outside diameter 1st c-rod trav.mm : 9.20 1/min : 1100 x Wall thickness Speed 2nd c-rod trav.mm: 4.00 : 6.00x1.50x600 x Length mm 1/min : 1180...1210 Speed 3rd c-rod trav.mm : 0.30...1.70 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. 1/min : 1250 Speed LOWEST RATED SPEED I per values ____ Control-lever START OF DELIVERY position degrees: 16...24 : 2.75...2.85 Prestroke mm Testino: : (2.70...2.90) 1/min : 400 Speed Contr.-rod trav.mm: 10.20 C-rod trav.mm min : 6.00 Cam sequence : 1-5-3-6-2-4 1/min : 100 Speed C-rod trav.mm : 19.00...21.00 C-rod trav.mm : 6.00 Speed 1/min : 400 C-rod trav.mm : 2.00

1/min: 520...580 Speed

SWITCH-OVER POINT

1/min : 400...500 Speed

FUEL-DELIVERY CHARACTERISTICS

Remarks:

: JOHN DEERE NO. : AR 88759

| 1 | |
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| BOSCH INJ. PUMP TEST SPECIFICATIONS | BASIC SETTING |
| Note inst. in remarks column | 1st speed 1/mi: 1050 |
| Test sheet : DEE 10.1 A9 Edition : 5.3.87 Superceeded : - Calibrating oil : ISO-4113 | Contrrod trav.mm: 12.40 |
| Superceeded :- | |
| | Del.quantity cm3/ : 17.417.6 |
| Combination no. : 9 400 231 039 | 100H.: (-) |
| Injection pump Pump designation : PES6P110A720RS370 | Dispersion cm3/: 0.4 |
| Governor design. : RSV4501050P0/465 | 100H.: (-) |
| | 2nd speed 1/min: 450 Contra-rod travam: 6.00 |
| Customer-spec. information Customer : JOHN DEERE | Del.quantity cm3/: 1.92.5 100H.: (-) |
| Engine : 6619 A | 100H.: (-) Dispersion cm3/: 0.4 |
| TEST BENCH REQUIREMENTS | 100H.: (-) |
| | SLEEVE POSITION |
| Calibrating-oil I inlet temp. °C : 3842 | Control-lever position Degree: -3 Speed 1/min: 800 |
| Overflow valve | Speed 17min: 800 Controd travelmm: 0.300.70 |
| : 1 457 413 010 | FULL-LOAD DELIV. AT FULL-LOAD STOP |
| Inlet press., bar : 1.5 | |
| Calibrating nozzle-holder | 1st version Speed 1/min: 1050 |
| assembly : 0 681 343 009 | Charge press. hPa : 930 Del.quantity cm3/ : 174.0176.0 1090H.: (-) |
| Opening pressure, bar : 172175 | 1000H.: (-) |
| pressure, bar . 172173 | HIGHEST RATED SPEED |
| Test inj. tubing : 1 680 750 015 | 1st version Control-lever |
| Outside diameter | position degrees: 4351 |
| x Wall thickness | Testing: |
| × Length mm : 6.90x1.50x600 | 1st e-rod trav.mm : 11.40 Speed 1/min : 10901100 |
| (A) Injection pump setting values Insp. values in parentheses | 2nd c-rod trav.mm : 4.00 Speed 1/min : 12051235 |
| Set constant delivery quant. | 3rd c-rod trav.mm : 0.301.70 |
| per values | Speed 1/min : 1300 |
| START OF DELIVERY | LOWEST RATED SPEED I Control-lever |
| Prestroke mm : 2.752.85 | position degrees: 2129 |
| : (2.702.90) i Contrrod trav.mm: 10.50 | Testing: |
| Cam sequence : 1-5-3-6-2-4 | Speed 1/min : 450 C-rod trav.mm min : 5.40 |
| | Speed 1/min : 450 |
| SD ang. spacing CS: 0-60-120-180-240-300 | C-rod trav.mm : 5.906.10 C-rod trav.mm : 2.00 |
| Tolerance + - 0.50(0.75) | Speed 1/min: 580640 |
| J03 | |
| | |

1/min : 850 Speed C-rod trav.mm max: 1.00

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min: 1050
C-rod trav.mm: 12.40
2nd speed 1/min: 650
C-rod trav.mm: 13.65...13.75

SWITCH-OVER POINT

1/min : 400...750 Speed

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa: 930
Speed 1/min: 650
Del.quantity cm3/: 198.5...201.5
1000H.: (-)
Speed 1/min: 500
Del.quantity cm3/: 124.0...132.0
1000H.: (-)

Remarks:

: JOHN DEERE NO. AR

BOSCH INJ. PUMP TEST SPECIFICATIONS BASIC SETTING Note inst. in remarks column 1/mi: 1050 1st speed : DEE 10,1A10 : 5.3.87 Test sheet Edition Contr.-rod trav.mm: 12.80 Superceeded Calibrating oil : ISO-4113 Del.quantity cm3/: 17.9...18.1 Combination no. : 9 400 231 043 100H.: (-) Injection pump Dispersion cm3/:0.4Pump designation : PES6P110A720RS370 Governor 100H.: (-) Governor design. : RSV400...1050P0/470 2nd speed 1/min: 630 Contr.-rod trav. m: 13.80 Del.quantity cm3/: 20.0...20.3 Customer-spec. information : JOHN DEERE Customer 100H.: (-) cm3/: 0.6 100H.: (-) : 6619 A Engine Dispersion TEST BENCH REQUIREMENTS SLEEVE POSITION Calibrating-oil inlet temp. OC Control-lever position : 38...42 Degree: -3 17min: 800 Speed Cont.-rod travelmm: 0.30...0.70 Overflow valve : 1 457 413 010 FULL-LOAD DELIV. AT FULL-LOAD STOP Inlet press., bar: 1.5 1st version Speed 1/min: 1050 Calibrating nozzle-holdér : 0 681 343 009 Del.quantity cm3/: 179.0...181.0 1000H.: (175.0...185.0) assembly Opening : 172...175 HIGHEST RATED SPEED pressure, bar 1st version Control-lever Test inj. tubing : 1 680 750 015 position degrees: 39...47 Outside diameter Testing: x Wall thickness 1st c-rod trav.mm : 11.80 Speed 1/min: 1095...1105 2nd c-rod trav.mm: 4.00 x Length mm : 6.00x1.50x600 Speed 1/min: 1170...1200 th speed 1/min: 1250 (A) Injection pump setting values Insp. values in parentheses 4th speed Set constant delivery quant. C-rod trav.mm : 0.30...1.70 per values LOWEST RATED SPEED I START OF DELIVERY Control-lever position degrees: 16...24 : 2.75...2.85 : (2.70...2.90) Prestroke mm Testing: Contr.-rod trav.mm: 12.80 1/min : 100 Speed Cam sequence : 1-5-3-6-2-4 C-rod trav.mm min : 19.00 1/min : 400 Speed C-rod trav.mm : 5,70 Speed 1/min : 850 SD ang. spacing $^{\circ}$ CS: 0-60-120-180-240-300 Tolerance + - $^{\circ}$: 0.50(0.75) C-rod trav.mm max: 1.00

J05

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TORQUE CONTROL
Torque-control curve - 1st version
             1/min : 1050
1st speed
  C-rod trav.mm : 12.75...12.85
2nd speed 1/min: 600
  C-rod trav.mm : 13.75...13.85
3rd speed 1/min: 500
  C-rod trav.mm : 13.90...14.00
 compensator (LDA, ADA, ALDA)
1st version
Setting
Speed
              1/min: 500
              hPa : 650
Pressure
Contr.-rod trav.mm: 12.75...12.85
Measurement
              1/min : 500
Speed
1st pressure hPa : 280
C-rod trav.mm : 10.30...10.70
FUEL-DELIVERY CHARACTERISTICS
Speed 1/min: 630
Del.quantity cm3/: 200.0...203.0
1000H:: (194.0...209.0)
Speed 1/min: 500
Del.quantity cm3/: 200.0...203.0
Del.quantity cm3/: 95.0...103.0
              1000H.: (89.0...109.0)
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BOSCH INJ. PUMP TEST SPECIFICATIONS BASIC SETTING Note inst. in remarks column 1/mi: 890 1st speed : DEE 7,6 A 6 : 5.3.87 Test sheet Contr.-rod trav.mm: 12.55 Edition Superceeded Calibrating oil Del.quantity cm3/: 18.5...18.7 : ISO-4113 Combination no. : 9 400 231 045 100H.: (-) cm3/:0.4Injection pump Dispersion : PES6P110A720RS361 Pump designation Governor 100H.: (-) Governor design. : RSV400...900P7/472 1/min: 400 2nd speed Contr.-rod trav. m: 6.00 Del.quantity cm3/: 1.9...2.5 Customer-spec. information : JOHN DEERE Customer 100H.: (-) cm3/: 0.4 100H.: (-) : 6466 A Engine Dispersion TEST BENCH REQUIREMENTS SLEEVE POSITION Calibrating-oil inlet temp. OC Control-lever position : 38...42 Degree: -3 1/min: 800 Speed Overflow valve Cont.-rod travelmm: 0.30...0.70 : 1 457 413 010 FULL-LOAD DELIV. AT FULL-LOAD STOP Inlet press., bar : 1.5 1st version 1/min: 890 Calibrating nozzle-holder Speed : 0 681 343 009 Del.quantity cm3/: 185.0...187.0 assembly 1000H.: (182.0...190.0) Opening : 172...175 HIGHEST RATED SPEED pressure, bar 1st version Control-lever Test inj. tubing : 1 680 750 015 position degrees: 46...54 Outside diameter Testing: 1st c-rod trav.mm : 11.55 x Wall thickness Speed 1/min: 915...925 : 6.00x1.50x600 x Length mm 2nd c-rod trav.mm: 4.00 1/min: 965...995 (A) Injection pump setting values Speed Insp. values in parentheses Set constant delivery quant. LOWEST RATED SPEED I per values ____ Control-lever position degrees: 11.5...19.5 START OF DELIVERY Testing: : 2.75...2.85 : (2.70...2.90) 1/min: 400 Prestroke mm Speed C-rod trav.mm min : 5.5 Contr.-rod trav.mm: 10.50 1/min : 400 Speed Cam sequence : 1-5-3-6-2-4 SWITCH-OVER POINT 1/min : 400...750 Speed SD ang. spacing $^{\circ}$ CS: 0-60-120-180-240-300 Tolerance + - $^{\circ}$: 0.50(0.75)

J07

Remarks: : JOHN DEERE NO. 94263 J08

BOSCH INJ. PUMP TEST SPECIFICATIONS BASIC SETTING Note inst. in remarks column 1/mi: 1100 1st speed Test sheet : ALO 13.8 G1 : 12.3.87 Contr.-rod trav.mm: 13.20 Superceeded Calibrating oil : ISO-4113 Del.quantity cm3/: 17.1...17.3 Combination no. : 9 400 231 056 100H.: (-) cm3/:0.4Injection pump Dispersion Pump designation : PES6P110A320RS392 100H.: (-) Governor : RSV600...1100P1/476 Governor design. 1/min: 600 2nd speed Contr.-rod trav. m: 6.20 Customer-spec. information Del.quantity cm3/: 1.4...2.2 : ALLIS CHALMERS Customer 100H.: (-) Engine : 685 I Dispersion cm3/:0.4100H.: (-) TEST BENCH REQUIREMENTS SLEEVE POSITION Calibrating-oil inlet temp. °C Control-lever position Degree: -3 1/min: 800 : 38...42 Speed Overflow valve Cont.-rod travelmm: 0.30...0.70 : 1 417 413 025 FULL-LOAD DELIV. AT FULL-LOAD STOP Inlet press., bar : 1.5 1st version 1/min: 1100 Calibrating nozzle-holder Speed Del.quantity cm3/: 171.0...173.0 1000H.: (168.0...176.0) : 0 681 343 009 assembly Opening pressure, bar : 172...175 HIGHEST RATED SPEED 1st version Control-lever position degrees: 48...56 Test inj. tubing : 1 680 750 008 Outside diameter Testing: x Wall thickness 1st c-rod trav.mm: 12.10 Speed 1/min: 1145...1155 : 6.00x2.00x600 x Length mm 2nd c-rod trav.mm : 4.00 Speed 1/min: 1170...1200 3rd c-rod trav.mm: 0.30...1.70 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. 1/min : 1300 Speed per values ____ LOWEST RATED SPEED I START OF DELIVERY Control-lever position degrees: 24..32 : 3.50...3.60 Prestroke mm : (3.45...3.65)
Contr.-rod trav.mm: 13.20
Cam sequence Testing: Speed 1/min : 600 Cam sequence : 1-5-3-6-2-4 C-rod trav.mm min: 6.20 1/min : 100 Speed C-rod trav.mm : 19.00 C-rod trav.mm : 1.00 SD ang. spacing 0 CS: 0-60-120-180-240-300 Tolerance + - 0 : 0.50(0.75) Speed 1/min: 800

J09

TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min : 1100
 C-rod trav.mm : 13.20...13.30
2nd speed 1/min : 800
 C-rod trav.mm : 13.90...14.20

BOSCH INJ. PUMP TEST SPECIFICATIONS 270-315 Tölerance + - 0 : 0.50(0.75) Note inst. in remarks column BASIC SETTING Test sheet : IHC : 12.3.87 1/mi: 1250 Edition 1st speed Superceeded Calibrating oil : ISO-4113 Contr.-rod trav.mm: 10.30 : 9 400 231 057 Combination no. Del.quantity cm3/: 11.4...11.6 100H.: (-) Injection pump Pump designation : PES8P100A921/5RS286 Dispersion cm3/:0.4Governor : RQV400...1250PA541K Governor design. 100H.: (-) Customer-spec. information 1/min: 400 Customer : IHC 2nd speed Contri-rod trav. m: 4.90 Del.quantity cm3/: 1.8...2.2 Engine : DTV 800 100H.: (-) cm3/: 0.5 100H.: (-) TEST BENCH REQUIREMENTS Dispersion Calibrating-oil inlet temp. OC : 40...45 SLEEVE POSITION inlet temp. Control-lever position Degree: 60...66 Overflow valve : 1 417 413 040 1/min: 1320 Speed Cont.-rod travelmm: 15.50...17.50 înlet press., bar : 2.8 FULL-LOAD DELIV. AT FULL-LOAD STOP Calibrating nozzle-holder : 1 688 901 017 1st version assembly Speed 1/min: 1250 Charge press. hPa: 1060 Opening Del.quantity cm3/: 114.0...116.0 1000H.: (112.0...118.0) pressure, bar : 207 Test inj. tubing : 9 681 230 713 HIGHEST RATED SPEED 1st version Control-lever Outside diameter x Wall thickness position degrees: 55...61 x Length mm : 6.35x4.20x1000 Testing: (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. 1st c-rod trav.mm : 9.30 Speed 1/min: 1300...1330 2nd c-rod trav.mm: 4.00 per values Speed 1/min: 1385...1415 3rd c-rod trav.mm : 0...1.001 START OF DELIVERY 1/min : 1640 Speed : 2.75...2.85 LOWEST RATED SPEED I Prestroke mm : (2.70...2.90) Control-lever Contr.-rod trav.mm: 10.50 position degrees: 10...16 Cam sequence : 1-8-4-2-7-3-6-5 Testing: 1/min: 400 Speed ? C-rod trav.mm min : 5.00 SD ang. spacing CS: 0-45-90-135-180-225-Speed 1/min : 200 : 7.10...8.60 C-rod trav.mm

C-rod trav.mm : 2.00 Speed 1/min : 565...625 CONSTANT REGULATION 1/min: 420...480 Speed TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1250 C-rod trav.mm : 10.25...10.35 2nd speed 1/min : 900

C-rod trav.mm : 11.25...11.35 3rd speed 1/min : 700

C-rod trav.mm : 10.45...10.55

SWITCH-OVER POINT

Speed 1/min: 240...300

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa: 1060 Speed 1/min : 900

Del.quantity cm3/: 121.0...127.0 1000H.: (120.0...128.0) Speed 1/min: 800 Del.quantity cm3/: 85.5...93.5 1000H.: (85.5...94.5)

BOSCH INJ. PUMP TEST SPECIFICATIONS BASIC SETTING Note inst. in remarks column 1/mi: 1050 1st speed : DEE 7,6 A10 : 5.3.87 Test sheet Contr.-rod trav.mm: 11.50 Edition Superceeded Del.quantity cm3/: 15.0...15.2 Calibrating oil : ISO-4113 : 9 400 231 066 100H.: (-) Combination no. Dispersion cm3/:0.4Injection pump Pump designation : PES6P110A720RS361 100H.: (-) Governor : RSV400...1050P2/477 Governor design. 1/min: 400 2nd speed Contr.-rod trav. m: 6.20 Del.quantity cm3/: 1.2...1.8 100H.: (-) Customer-spec. information Customer : JOHN DEERE cm3/: 0.4 100H.: (-) Engine : 6466 AR-01 Dispersion TEST BENCH REQUIREMENTS SLEEVE POSITION Calibrating-oil inlet temp. OC Control-lever position : 38...42 Degree: -3 1/min: 800 Speed Cont.-rod travelmm: 0.30...0.70 Overflow valve : 1 457 413 010 FULL-LOAD DELIV. AT FULL-LOAD STOP Inlet press., bar: 1.5 1st version Speed 1/min: 1050 Charge press. hPa: 700 Del.quantity cm3/: 150.0...152.0 1000H.: (147...155) Calibrating nozzle-holder : 0 681 343 009 assembly Opening : 172...175 pressure, bar HIGHEST RATED SPEED 1st version Test inj. tubing : 1 680 750 015 Control-lever position degrees: 40...48 Outside diameter Testing: x Wall thickness : 6.00x1.50x600 1st c-rod trav.mm : 10.40 x Length mm Speed 1/min: 1105...1115 2nd c-rod trav.mm: 4.00 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. 1/min: 1185...1215 Speed 1/min : 1280 4th speed C-rod trav.mm : 0.30...1.70 per values START OF DELIVERY LOWEST RATED SPEED I Control-lever : 2.80...2.90 position degrees: 17...25 Prestroke mm : (2.75...2.95) Contr.-rod trav.mm: 11.50 Testing: Cam sequence : 1-5-3-6-2-4 Speed 1/min : 100 C-rod trav.mm min : 19.00 1/min : 400 Speed mm : 5,70 1/min : 800 C-rod trav.mm SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50(0.75) Speed C-rod trav.mm max: 1.00

J13

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min : 1050

C-rod trav.mm : 11.50...11.60

2nd speed 1/min: 650

C-rod trav.mm : 12.30...12.40

3rd speed 1/min: 500

C-rod trav.mm : 9.20...9.30

compensator (LDA,ADA,ALDA)

1st version

Setting

1/min : 500 hPa : 540 Speed

Pressure

Contr.-rod trav.mm: 11.45...11.55

Measurement

Speed 1/min : 500

1st pressure hPa : 270

C-rod trav.mm : 9.40...10.00

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa: 700

Speed 1/min: 650 Del.quantity cm3/: 162.0...166.0 1000H.: (159.0...169.0)

Charge press. hPa : -

1/min : 500 Speed

Del.quantity cm3/: 89.0...95.0 1000H.: (87.0...97.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS 100H.: (-) Note inst. in remarks column Dispersion cm3/:0.8Test sheet : ALO 13.8 H : 12.3.87 Edition 100H.: (-=) Superceeded Calibrating oil : ISO-4113 2nd speed 1/min: 600 Contr.-rod trav. m: 5.10...5.30 Del.quantity cm3/: 2.9...3.7 : 9 400 231 077 Combination no. 100H.: (-) cm3/: 0.7 100H.: (-) Injection pump Dispersion Pump designation : PES6P120A320RS454 Governor Governor design. : RSV600...1100P2482R SLEEVE POSITION Control-lever position Degree: -3 1/min: 800 TEST BENCH REQUIREMENTS Overflow valve Cont.-rod travelmm: 0.30...0.70 : 1 417 413 025 FULL-LOAD DELIV. AT FULL-LOAD STOP Inlet press., bar: 1.5 1st version Speed 1/min: 1100 Del.quantity cm3/: 221.0...223.0 Calibrating nozzle-holder : 0 681 443 022 assembly 1000H.: (221.0...223.0) Opening pressure, bar : 172...175 HIGHEST RATED SPEED 1st version Control-lever Test inj. tubing : 1 680 413 025 position degrees: 43...51 Outside diameter Testing: 1st c-rod trav.mm : 10.30 Speed 1/min : 1145...1155 x Wall thickness : 8.00x2.00x1000 x Length mm 2nd c-rod trav.mm: 4.00 Speed 1/min: 1210...1240 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. 3rd c-rod trav.mm : 0.30...1.70 1/min : 1300 Speed per values ____ LOWEST RATED SPEED I START OF DELIVERY Control-lever position degrees: 25...20 : 3.45...3.55 Prestroke mm : (3.40...3.50) Testing: Contr.-rod trav.mm: 10.50 1/min: 600 Speed Cam sequence : 1-5-3-6-2-4 C-rod trav.mm min: 4.80 1/min : 600 Speed C-rod trav.mm : 5.10...5.30 C-rod trav.mm : 19.00 SD ang. spacing 0 CS: 0-60-120-180-240-300 Tolerance + - 0 : 0.5(0.75) 1/min: 100 Speed : 2.00 C-rod trav.mm 1/min : 655...715 Speed BASIC SETTING FUEL-DELIVERY CHARACTERISTICS Speed 1/min: 1000 Del.quantity cm3/: 217.0...223.0 1000H.: (214.0...227.0) 1/mi: 1100 1st speed Contr.-rod trav.mm: 11.20...11.40 Del.quantity cm3/: 22.1...22.3

J15

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BOSCH INJ. PUMP TEST SPECIFICATIONS BASIC SETTING Note inst. in remarks column 1/mi: 1050 1st speed Test sheet : DEE 7.6 0 : 5.3.87 Edition Contr.-rod trav.mm: 11.30 Superceeded Calibrating oil : ISO-4113 Del.quantity cm3/: 14.5...14.7 : 9 400 231 082 Combination no. 100H.: (-) Injection pump Dispersion cm3/:0.4Pump designation : PES6P110A720RS3038 Governor 100H.: (-) Governor design. : RSV400...1050P2/488 2nd speed 1/min: 400 Contr.-rod trav. m: 5.90 Customer-spec. information Del.quantity cm3/: 1.30...1.90 100H.: (-) : JOHN DEERE Customer : 6466 A Engine SLEEVE POSITION TEST BENCH REQUIREMENTS Control-lever position Degree: -3 1/min: 800 Calibrating-oil inlet temp. °C Speed : 38...42 Cont.-rod travelmm: 0.30...0.70 Overflow valve FULL-LOAD DELIV. AT FULL-LOAD STOP : 1 457 413 010 1st version Speed 1/min: 1050 Inlet press., bar : 1.5 Charge press. hPa : 1200 Del.quantity cm3/ : 145.0...147.0 1000H.: (-) Calibrating nozzle-holder : 0 681 343 009 assembly HIGHEST RATED SPEED Opening. pressure, bar : 172...175 1st version Control-lever position degrees: 39...47 Test inj. tubing : 1 680 750 015 Testing: 1st c-rod trav.mm: 10.30 Outside diameter 1/min : 1095...1105 x Wall thickness Speed : 6.00x1.50x600 2nd c-rod trav.mm : 4.00 x Length mm Speed 1/min: 1165...1195 3rd c-rod trav.mm: 0.30...1.70 (A) Injection pump setting values Speed 1/min: 1300 Insp. values in parentheses Set constant delivery quant. per values LOWEST RATED SPEED I Control-lever START OF DELIVERY position degrees: 16.5 Setting point w/out aux. spring : 3.45...3.55 Speed 1/min : 400 Prestroke mm Contr.-rod trav.mm: 5.40...5.60 : (3.40..3.60) Contr.-rod trav.mm: 10.50 Cam sequence : 1-5-3-6-2-4 Testing: 1/min : 100 Speed C-rod trav.mm min : 19.00 1/min : 400 Speed C-rod trav.mm : 5.90...6.10 SD ang. spacing 0 CS: 0-60-120-180-240-300 Tolerance + - : 0.50(0.75) C-rod trav.mm : 2.00

J17

1/min : 600...660 Speed 1/min : 680 Speed C-rod trav.mm max: 1.00 TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min : 1050 C-rod trav.mm : 11.25...11.35 2nd speed 1/min: 700 C-rod trav.mm : 12.25...12.55 3rd speed 1/min : 500 C-rod trav.mm : 9.25...9.35 compensator (LDA, ADA, ALDA) 1st version Setting 1/min : 500 Speed Pressure hPa : 610 Contr.-rod trav.mm: 12.05...12.15 Measurement 1/min : 500 Speed 1st pressure hPa : 400 C-rod trav.mm : 10.90...11.30 FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 1200 Speed 1/min : 700 Del.quantity cm3/: 165.0...171.0 1000H.: (-) Charge press. hPa : -Speed 1/min : 500 Del.quantity cm3/: 90.0...94.0 1000H.: (-)

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : ALO 13.8.G : 12.3.87 Edition Superceeded Calibrating oil : ISO-4113 Combination no. : 9 400 231 109 Injection pump Pump designation : PES6P110A320RS392 Governor Governor design. : RSV750P7/498 Customer-spec. information Customer : ALLIS CHALMERS : 685 I Engine TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C : 40...45 Overflow valve : 1 457 413 025 Inlet press., bar: 1.5 Calibrating nozzle-holder : 0 681 343 009 assembly Opening pressure, bar : 172...175 Test inj. tubing : 1 680 413 025 Outside diameter x Wall thickness : 6.00x1.50x600 x Length mm (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values ____ START OF DELIVERY

Prestroke mm **.** 3.45...3.55 : (3.40...3.60) Contr.-rod trav.mm: 10.50 Cam sequence : 1-5-3-6-2-4 SD ang. spacing $^{\circ}$ CS: 0-60-120-180-240-300 Tolerance + = $^{\circ}$: 0.50(0.75) BASIC SETTING 1st speed 1/mi: 735 Contr.-rod trav.mm: 12.70 Del.quantity cm3/: 15.8...16.1

100H.: (-) cm3/:0.4Dispersion

100H.: (-)

SLEEVE POSITION Control-lever position Degree: -3 1/min: 800

Cont.-rod travelmm: 0.30...0.70

1st version Speed 1/min: 735 Del.quantity cm3/: 158.5...160.5 1000H.: (-)

FULL-LOAD DELIV. AT FULL-LOAD STOP

HIGHEST RATED SPEED 1st version Control-lever position degrees: 44.5...52.5

Testing: 1st c-rod trav.mm: 11.70 Speed 1/min: 760...765 2nd c-rod trav.mm : 4.00 Speed 1/min: 800...830

3rd c-rod trav.mm : 0.30...1.70 Speed 1/min: 870

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DEE 15.6 E1 : 12.3.87 Edition

Superceeded

Calibrating oil : ISO-4113

Combination no. : 9 400 231 110

Injection pump

Pump designation : PES8P110A120RS

Governor

Governor design. : RSV400...1050P2/499

Customer-spec. information

Customer : JOHN DEERE

: 9855 T Engine

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. OC

: 38...42

Overflow valve

: 1 457 413 010

Inlet press., bar: 1.5

Calibrating nozzle-holder

: 0 681 343 009 assembly

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter

x Wall thickness

: 6.35x1.83x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

START OF DELIVERY

: 3.45...3.55 Prestroke mm : (3.40...3.60)

Contr.-rod trav.mm: 10.50

Cam sequence : 1-5-6-3-4-2-7-8

SD ang. spacing CS: 0-45-90-135-180-225-

270-315 Tolerance + - 0 : 0.50(0.76) BASIC SETTING 1/mi: 1050 1st speed Contr.-rod trav.mm: 11.50 Del.quantity cm3/: 16.4...16.6 100H.: (-) cm3/:0.4Dispersion 100H.: (-) 1/min: 400 2nd speed Contr.-rod trav. m: 5.80 Del.quantity cm3/: 2.2...2.8 100H.: (-) cm3/: 0.4 100H.: (-) Dispersion SLEEVE POSITION Control-lever position Degree: -3 17min: 800 Speed Cont.-rod travelmm: 0.30...0.70 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version Speed 1/min: 1050 Charge press. hPa : 1020 Del.quantity cm3/: 164.0...166.0 1000H.: (-) HIGHEST RATED SPEED 1st version Control-lever position degrees: 35...43 Testing: 1st c-rod trav.mm : 10.50 1/min : 1095...1105 Speed 2nd c-rod trav.mm : 4.00 Speed 1/min: 1155...1185 3rd c-rod trav.mm : 0.30...0.70 1/min : 1300 Speed LOWEST RATED SPEED I Control-lever position degrees: 11...19 Testing: 1/min : 400 Speed C-rod trav.mm min : 5.40 Speed 1/min : 400 C-rod trav.mm : 5.70...5.90

: 19.00 C-rod trav.mm Speed 1/min: 100 C-rod trav_mm : 2.00 1/min: 580...640 Speed TORQUE CONTROL Torque-control curve - 1st version 1/min : 1050 1st speed C-rod trav.mm : 11.50 2nd speed 1/min : 750 C-rod trav.mm : 12.70...13.00 3rd speed 1/min : 550 C-rod trav.mm : 10.40...10.50 Measurement 1/min : 550 Speed 1st pressure hPa : 370 C-rod trav.mm : 11.35...11.75 2nd pressure hPa : 280 C-rod trav.mm : 10.40...10.80 SWITCH-OVER POINT Speed 1/min : 400..700 FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa : 1020 Speed 1/min : 750 Del.quantity cm3/: 184.0...187.0 1000H.: (-) 1/min : 550 Speed Del.quantity cm3/: 127.0...137.0 1000H.: (-)

SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50(0.75) BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column BASIC SETTING Test sheet : ALO 13.8 E : 12.3.87 Edition 1st speed 1/mi: 1150. Superceeded Calibrating oil : ISO-4113 Contr.-rod trav.mm: 9.55 : 9 400 231 117 Del.quantity cm3/: 19.1...19.3 Combination no. Injection pump 100H.: (-) Pump designation : PES6P120A320RS411 cm3/:0.5Governor Dispersion Governor design. : RQV445...1150PA497-1 100H.: (-) Sustomer-spec. information 2nd speed 1/min: 445 : ALLIS CHALMERS Contr.-rod trav. m: 4.5 Customer Del.quantity cm3/: 1.1 100H.: (1.4) Engine : 6120 T cm3/: 0.8 100H.: (-) Dispersion TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. OC SLEEVE POSITION : 40...45 1/min: 1170 Speed Cont.-rod travelmm: 15.20...17.80 Overflow valve : 1 417 413 025 FULL-LOAD DELIV. AT FULL-LOAD STOP Inlet press., bar : 1.5 1st version Speed 1/min: 1150 Del.quantity cm3/: 191.0...193.0 1000H.: (-) Calibrating nozzle-holder : 0 681 443 022 assembly HIGHEST RATED SPEED Opening pressure, bar : 172...175 1st version Control-lever position degrees: 52.5...56.5 Test inj. tubing : 0 680 750 025 Testing: Outside diameter 1st c-rod trav.mm : 8.55 1/min: 1190...1200 x Wall thickness Speed : 8.00x2.00x1000 2nd c-rod trav.mm : 4.00 x Length mm Speed 1/min: 1275...1305 3rd c-rod trav.mm : 0...1.00 Speed 1/min : 1350 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values ____ LOWEST RATED SPEED I Control-lever START OF DELIVERY position degrees: 15...24 Prestroke mm : 2.80...2.90 Testing: : (2.75...2.95) Speed 1/min : 445 Contr.-rod trav.mm: 10.50 C-rod trav.mm min: 4.40 Speed 1/min: 500 C-rod trav.mm: 2.90...4.70 C-rod trav.mm: 2.00 Cam sequence : 1-5-3-6-2-4 1/min : 620...680 Speed

TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min: 1150
 C-rod trav.mm: 9.55
2nd speed 1/min: 800
 C-rod trav.mm: 9.95...10.15

SWITCH-OVER POINT
Speed 1/min: 270...340

FUEL-DELIVERY CHARACTERISTICS
Speed 1/min: 800
Del.quantity cm3/: 190.0...196.0
1000H.: (-)

BOSCH INJ. PUMP TEST SPECIFICATIONS 270-315 Tolerance + - 0 : 0.50(0.75) Note inst. in remarks column BASIC SETTING Test sheet : DEE 15.6 D Edition : 6.3.87 1st speed 1/mi: 1050 Superceeded : ISO-4113 Calibrating oil Contr.-rod trav.mm: 10.00 Del.quantity cm3/: 14.7...14.9 Combination no. : 9 400 231 128 Injection pump 100H.: (-) Pump designation : PES8P110A120RS3111 Dispersion cm3/:0.4Governor : RSV400...1050P2/435 Governor design. 100H.: (-) 2nd speed 1/min: 400 Contr.-rod trav. m: 5.20 Del.quantity cm3/: 2.2...2.8 100H.: (-) Customer-spec. information : JOHN DEERE Customer Engine : 8955 T cm3/:0.4Dispersion 100H.: (-) TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C SLEEVE POSITION : 38...42 Control-lever position Degree: -3 1/min: 800 Overflow valve Speed : 1 457 413 010 Cont.-rod travelmm: 0.30...1.7 Inlet press., bar: 1.5 FULL-LOAD DELIV. AT FULL-LOAD STOP Calibrating nozzle-holder 1st version : 0 681 343 009 1/min: 1050 assembly Speed Charge press. hPa : 670
Del.quantity cm3/ : 147.0...149.0
1000H.: (-) Opening pressure, bar : 172...175 HIGHEST RATED SPEED Test inj. tubing : 1 680 750 015 1st version Control-lever position degrees: 39.5...47.5 Outside diameter x Wall thickness : 6.00x1.50x600 x Length mm Testing: 1st c-rod trav.mm : 9.00 1/min: 1095...1105 (A) Injection pump setting values Speed Insp. values in parentheses Set constant delivery quant. 2nd c-rod trav.mm : 4.00 1/min : 1155...1185 Speed per values ____ 3rd c-rod trav.mm : 0.30...1.70 1/min : 1275 Speed START OF DELIVERY LOWEST RATED SPEED I Prestroke mm : 3.45...3.55 Control-lever : (3.40...3.60) position degrees: 17...25 Contr.-rod trav.mm: 10.50 Cam sequence : 1-5-6-3-4-2-7-8 Testing: 1/min : 400 Speed C-rod trav.mm min : 4.60 1/min : 100 Speed SD ang. spacing $^{\circ}$ CS: 0-45-90-135-180-225-C-rod trav.mm : 16.00 J25

```
trav.mm : 5.20
1/min : 565...625
1/min : 800
C-rod trav.mm
Speed
Speed
C-rod trav.mm max: 1.00
TORQUE CONTROL
Torque-control curve - 1st version
             1/min : 1050
1st speed
  C-rod trav.mm : 9.95...10.05
2nd speed 1/min: 750
C-rod trav.mm : 10.85...11.15
3rd speed 1/min : 550
C-rod trav.mm : 9.45...9.55
SWITCH-OVER POINT
Speed
             1/min : 400...700
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 670
             1/min : 750
Speed
Del.quantity cm3/: 163.5...166.5
              1000H.: (-)
Charge press. hPa : -
             1/min : 550
Speed
Del.quantity cm3/: 130.0...134.0
1000H.: (-)
```

| BOSCH INJ. PUMP TEST SPECIFICATIONS | BASIC SETTING |
|--|--|
| Note inst. in remarks column | 1st speed 1/mi: 1050 |
| Test sheet : DEE 10.1 B2 Edition : 5.3.87 Superceeded : - Calibrating oil : ISO-4113 | Contrrod trav.mm: 12.00 |
| Superceeded :- | |
| | Del.quantity cm3/: 16.416.6 |
| Combination no. : 9 400 231 129 | 100H.: (-) |
| Injection pump Pump designation : PES6P110A72ORS3086-1 | Dispersion cm3/: 0.4 |
| Governor design. : RSV4001050P0/501 | 100H.: (-) |
| Customer-spec, information Customer : JOHN DEERE | 2nd speed 1/min: 400 Contrrod trav. m: 5.80 Del.quantity cm3/: 1.92.5 |
| Engine : 6619 A | 100H.: (-) Dispersion cm3/: 0.4 100H.: (0.4) |
| TEST BENCH REQUIREMENTS | |
| Calibrating-oil inlet temp. C : 3842 | SLEEVE POSITION Control-lever position Degree: -3 Speed 1/min: 800 |
| Overflow valve : 1 457 413 010 | Controd travelmm: 0.301.00 FULL-LOAD DELIV. AT FULL-LOAD STOP |
| Inlet press., bar: 1.5 | |
| Calibrating nozzle-holder assembly : 0 681 343 009 | 1st version Speed 1/min: 1050 Del.quantity cm3/: 164.0166.0 1000H.: (-) |
| Opening pressure, bar : 172175 | HIGHEST RATED SPEED 1st version |
| Test inj. tubing : 1 680 750 015 | Control-lever position degrees: 4654 |
| Outside diameter x Wall thickness x Length mm : 6.00x1.50x600 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values | Testing: 1st c-rod trav.mm : 11.0 Speed 1/min : 10901100 2nd c-rod trav.mm : 4.00 Speed 1/min : 11801210 3rd c-rod trav.mm : 0.301.70 Speed 1/min : 1280 |
| START OF DELIVERY | LOWEST RATED SPEED I Control-lever |
| Prestroke mm : 3.453.55 (3.403.60) Contrrod trav.mm: 10.50 Cam sequence : 1-5-3-6-2-4 | position degrees: 2432 Testing: Speed 1/min: 400 C-rod trav.mm min: 5.20 Speed 1/min: 100 C-rod trav.mm : 19.00 |
| SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50(0.75) | C-rod trav.mm : 5.80 Speed 1/min : 400 C-rod trav.mm : 2.00 |
| J27 | |

Speed 1/min : 560...620

TORQUE CONTROL

Torque-control curve - 1st version
1st speed 1/min: 1050
C-rod trav.mm: 12.00
2nd speed 1/min: 650
C-rod trav.mm: 12.60...12.90

FUEL-DELIVERY CHARACTERISTICS

Speed 1/min: 650
Del.quantity cm3/: 172.0...178.0
1000H.: (-)

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : ALO 13.8.D : 12.3.87 Edition Superceeded Calibrating oil : ISO-4113 Combination no. : 9 400 231 150 Injection pump Pump designation : PES6P130A700kS6013 Customer-spec. information : ALLIS CHALMERS Customer : 6138 Engine TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C : 40...45 Overflow valve : 1 417 413 025 Inlet press., bar: 1.5 Calibrating nozzle-holder : 0 681 443 022 assembly Opening pressure, bar : 172...175 Test inj. tubing : 1 680 750 060 Outside diameter x Wall thickness : 8.00x2.00x1000 x Length mm (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values ____ START OF DELIVERY : 3.40...3.50 Prestroke mm : (3.35...3.55) Contr.-rod trav.mm: 10.50 Cam sequence : 1-5-3-6-2-4 SD ang. spacing 0 CS: 0-60-120-180-240-300 Tolerance + - : 0.50(0.75)

BASIC SETTING

K01

1st speed 1/mi: 900 Contr.-rod trav.mm: 11.50 Del.quantity cm3/: 29.8...30.3 100H.: (-) Dispersion cm3/:0.6100H.: (-) 1/min: 300 2nd speed Contr.-rod trav. m: 4.20 Del.quantity cm3/: 2.0...3.0 100H.: (-) Dispersion cm3/:0.5100H.: (-) FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version 1/min: 900 Speed Del.quantity cm3/: 297.5...302.5 1000H.: (-) FUEL-DELIVERY CHARACTERISTICS Speed 1/min: 300 Del.quantity cm3/: 20.0...30.0 1000H.: (-) Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : DEE 15.6 E : 13.3.87

Superceeded

Calibrating oil : ISO-4113

Combination no. : 9 400 231 151

Injection pump

Pump designation : PES8P110A100RS3098

Customer-spec. information Customer : JOHN DEERE

: 8955 T Engine

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C

: 38...42

Overflow valve

: 1 457 413 010

Inlet press., bar: 1.5

Calibrating nozzle-holder

assembly : 0 681 343 009

Opening

pressure, bar : 172...175

Test inj. tubing : 9 681 230 705

Outside diameter x Wall thickness

: 6.00x1.50x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

START OF DELIVERY

: 3.45...3.55 Prestroke mm

(3.40...3.60)
Contr.-rod trav.mm: 10.50
Cam sequence Cam sequence : 1-5-6-3-4--2-7-8

SD ang. spacing CS: 0-45-90-135-180-225-

270-315

Tolerance + - 0: 0.50(0.75)

```
1st speed 1/mi: 900

Contr.-rod trav.mm: 13.40

Del.quantity cm3/: 19.7...19.9

100H.: (-)

Dispersion cm3/: 0.4

100H.: (-)

2nd speed 1/min: 400

Contr.-rod trav. m: 5.20

Del.quantity cm3/: 2.3...2.9

100H.: (-)

Dispersion cm3/: 0.4

100H.: (-)

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version
Speed 1/min: 900
Del.quantity cm3/: 197.0...199.0

1000H.: (-)
```

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet Edition : ALO 13.8.F : 13.3.87

Superceeded

Calibrating oil : ISO-4113

Combination no. : 9 400 231 161

Injection pump

Pump designation : PES6P120A3209RS464

Governor

: RQV500...1150PA497-2 Governor design.

Customer-spec. information

Customer : ALLIS CHALMERS

: 6120 T Engine

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. °C : 40...45

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.5

Calibrating nozzle-holder

assembly : 0 681 443 022

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 060

Outside diameter x Wall thickness

x Length mm : 8.00x2.00x1000

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values

START OF DELIVERY

Prestroke mm : 2.80...2.90

(2.75...2.95)
Contr.-rod trav.mm: 10.50
Cam sequence : 1-5-2-6-2-4

SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50(0.75) BASIC SETTING 1st speed 1/mi: 1150 Contr.-rod trav.mm: 10.50 Del.quantity cm3/: 19.3...19.5 100H.: (-) Dispersion cm3/:0.4100H.: (-) 2nd speed 1/min: 500 Contr.-rod trav. m: 5.85 Del.quantity cm3/: 3.3...3.9 100H.: (-) cm3/: 0.4 100H.: (-) Dispersion SLEEVE POSITION Control-lever position Degree: 60...68
Speed 1/min: 1170
Cont.-rod travelmm: 15.20...17.80 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version Speed 1/min: 1150 Del.quantity cm3/: 193.0...195.0 1000H.: (-) HIGHEST RATED SPEED 1st version Control-lever position degrees: 53...61 Testing: 1st c-rod trav.mm : 9.50 Speed 1/min: 1190...1200 2nd c-rod trav.mm : 4.00 Speed 1/min: 1300...1330 3rd c-rod trav.mm: 0...1.00 1/min : 1400 Speed LOWEST RATED SPEED I Control-lever position degrees: 17...25 Testing: Speed 1/min: 500 C-rod trav.mm min: 5.95 Speed 1/min: 600 C-rod trav.mm : 4.20...5.60 C-rod trav.mm : 2.00

K05

1/min: 760...820 Speed

TORQUE CONTROL

Torque-control curve - 1st version

1st speed 1/min: 1150 C-rod trav.mm : 10.50 2nd speed 1/min: 900

C-rod trav.mm : 10.90...11.10

FUEL-DELIVERY CHARACTERISTICS

1st version

Charge press. hPa : 9000

Del.quantity cm3/: 203.0...209..0 1000H.: (-)

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BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                          270-315
                                                    Tolerance + - 0
                                                                        : 0.50(0.75)
Note inst. in remarks column
                                                    BASIC SETTING
                   : DEE 15.6 B2
Test sheet
Edition
                   : 5.3.87
                                                                   1/mi: 1050
                                                    1st speed
Superceeded
Calibrating oil
                   : ISO-4113
                                                    Contr.-rod trav.mm: 11,30
Combination no.
                   : 9 400 231 162
                                                    Del.quantity cm3/: 16.8...17.0
                                                                  100H.: (-)
Injection pump
Pump designation
                   : PES8P110A120RS3089
                                                    Dispersion
Governor
                                                                  cm3/:0.4
                   : RSV400...1050P2/494
Governor design.
                                                                  100H.: (-)
Customer-spec, information
                                                                  1/min: 400
                                                    2nd speed
                   : JOHN DEERE
                                                    Contr.-rod trav. m: 5.20
Customer
                                                    Del.quantity cm3/: 22.0...28.0
100H.: (-)
                   : 8955 A
Engine
                                                                  cm3/: 0.4
100H.: (-)
                                                    Dispersion
TEST BENCH REQUIREMENTS
Calibrating-oil inlet temp. OC
                                                    SLEEVE POSITION
                   : 38...42
                                                    Control-lever position
                                                                 Degree: -3
                                                                  17min: 800
Overflow valve
                                                    Speed
                   : 1 456 413 000
                                                    Cont.-rod travelmm: 0.30..0.70
                                                    FULL-LOAD DELIV. AT FULL-LOAD STOP
Inlet press., bar : 1.5
Calibrating nozzle-holder
                                                    1st version
                   : 0 681 343 009
                                                    Speed
 assembly
                                                                  1/min: 1950
                                                    Charge press. hPa : 1000
                                                    Del.quantity cm3/: 168.0...170.0
1000H.: (165.0...173.0)
Opening
 pressure, bar : 172...175
                                                    HIGHEST RATED SPEED
Test inj. tubing : 9 681 230 705
                                                    1st version
                                                    Control-lever
Outside diameter
                                                     position degrees: 37...45
x Wall thickness
x Length mm
                   : 6.00x1.50x600
                                                    Testing:
                                                    1st c-rod trav.mm : 10.30
                                                                 1/min : 1095...1105
(A) Injection pump setting values
                                                      Speed
    Insp. values in parentheses
Set comstant delivery quant.
                                                    2nd c-rod trav.mm : 4.00
                                                    Speed 1/min: 1170...1200
3rd c-rod trav.mm: 4.00
    per values ____
                                                      Speed 1/min: 1170...1200
                                                    4th speed
                                                                1/min : 1300
START OF DELIVERY
                                                                       : 0.30...1.70
                                                      C-rod trav.mm
                   : 3.45...3.55
Prestroke mm
                   : (3.40...3.60)
                                                    LOWEST RATED SPEED I
Contr.-rod trav.mm: 10.50
                                                    Control-lever
Cam sequence : 1-5-6-3-4-2-7-8
                                                     position degrees: 16...24
                                                    Testing:
                                                    Speed
                                                                 1/min : 400
SD ang. spacing CS: 0-45-90-135-180-225-
                                                    C-rod trav.mm min: 4.60
K07
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```
1/min : 400
Speed
C-rod trav.mm : 5.10...5.30
C-rod trav.mm
                        : 19.00
               1/min : 100
Speed
Speed
                1/min : 800
C-rod trav.mm max : 1.00
C-rod trav.mm : 2.00
           1/min : 580...640
Speed
TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min : 1050
C-rod trav.mm : 11.30
2nd speed 1/min : 750
C-rod trav.mm : 12.15...12.45
SWITCH-OVER POINT
               1/min : 400...700
Speed
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa: 1000

Speed 1/min: 750

Del.quantity cm3/: 181.0...185.0

1000H.: (178.0...188.0)

Speed 1/min: 500

Del.quantity cm3/: 127.0...131.0

1000H.: (124.0...134.0)
Remarks:
                         : JOHN DEERE NO. RE
```

: 13794

BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : DEE 15.6 D : 13.3.87 Edition Superceeded Calibrating oil : ISO-4113 Combination no. : 9 400 231 163 Injection pump Pump designation : PES8P120A300/3RS6014 Customer-spec. information : JOHN DEERE Customer : 8955 A Engine TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. °C : 38...42 Overflow valve : 1 457 413 010 Inlet press., bar: 1.5 Calibrating nozzle-holder assembly : 1 688 901 017 Opening pressure, bar : 207..210 Test inj. tubing : 1 680 750 067 Outside diameter x Wall thickness : 6.00x1.50x1000 x Length mm (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values ____ START OF DELIVERY Prestroke mm : 3.45...3.55 : (3.40...3.60) Contr.-rod trav.mm: 10.50

Cam sequence : 1-5-6-3-4-2-7-8

Tolerance + - 0: 0.50(0.75)

K09

SD ang. spacing CS: 0-45-90-135-180-225-

270-315

BASIC SETTING

1st speed 1/mi: 900
Contr.-rod trav.mm: 13.30
Del.quantity cm3/: 26.8...27.1

100H.: (-)

Dispersion cm3/: 0.5

100H.: (0.75)

2nd speed 1/min: 400 Contr.-rod trav. m: 4.70 Del.quantity cm3/: 2.2...2.8 100H.: (-)

Dispersion cm3/: 0.8 100H.: (1.2)

FULL-LOAD DELIV. AT FULL-LOAD STOP

1st version

Speed 1/min: 900 Del.quantity cm3/: 266.0...268.0

1000H.: (263.0...271.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet Edition Superceeded : ALO 13.8 A2 : 11.3.87

Calibrating oil : ISO-4113

Combination no. : 9 400 231 177

Injection pump

Pump designation : PES6P120A320RS410

Governor

Governor design. : RQV300...1000PA498-1

Customer-spec. information

: ALLIS CHALMERS Customer

: 6138 T Engine

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. C

: 40...45

Overflow valve

: 1 417 413 060

Inlet press., bar: 1.5

Calibrating nozzle-holder

: 0 681 343 009 assembly

Opening

pressure, bar : 172...175

Test inj. tubing : 1 689 750 060

Outside diameter x Wall thickness

x Length mm : 8.00X2.00X1000

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. per values ____

START OF DELIVERY

: 2.80...2.90 Prestroke mm : (2.75...2.95) Contr.-rod trav.mm: 10.50

Cam sequence : 1-5-3-6-2-4

SD ang. spacing 0 CS: 0-60-120-180-240-300 Tolerance + - 0 : 0.50(0.75) BASIC SETTING 1st speed 1/mi: 1000 Contr.-rod trav.mm: 12.90 Del.quantity cm3/: 29.3...29.8 100H.: (-) Dispersion cm3/:0.5100H.: (0.9) 1/min: 300 2nd speed Contr.-rod trav. m: 5.50

Del.quantity cm3/: 2.7...3.3

100H.: (-)

Dispersion cm3/: 0.65 100H.: (0.95) SLEEVE POSITION Control-lever position Degree: 61...69 17min: 1020 Speed Cont.-rod travelmm: 15.20...17.80 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version 1/min: 1000 Speed Del.quantity cm3/: 293.5...297.5 1000H.: (290.5...300.5) HIGHEST RATED SPEED 1st version Control-lever position degrees: 58.5...66.5 Testing: 1st c-rod trav.mm : 11.90 Speed 1/min: 1040...1050 2nd c-rod trav.mm : 4.09 Speed 1/min : 1130...1160 3rd c-rod trav.mm : 1130...1160 Speed 1/min: 4.00+ 4th speed 1/min: 1180 C-rod trav.mm : 0...1.70 SET IDLE CONTROL-LEVER Control-lever position degrees: 260 LOWEST RATED SPEED I Control-lever

Testing: Speed 1/min: 300 C-rod trav.mm min: 5.60 C-rod trav.mm : 6.30...7.70 C-rod trav.mm : 2.00 Speed 1/min: 360...400

TORQUE CONTROL

Torque-control curve - 1st version 1st speed 1/min : 1000

C-rod trav.mm : 12.90 2nd speed 1/min: 800

C-rod trav.mm : 12.90...13.10

SWITCH-OVER POINT

1/min : 230...260 Speed

FUEL-DELIVERY CHARACTERISTICS

1/min : 800 Speed

Del.quantity cm3/: 269.0...274.0 1000H.: (265.0...277.0)

Remarks:

position degrees: 16...24

BOSCH INJ. PUMP TEST SPECIFICATIONS SD mark cyl. no. : 1 Note inst. in remarks column BASIC SETTING : DEE 10.1 C3 : 16.3.87 Test sheet Edition 1st speed 1/mi: 800 Superceeded : ISO-4113 Contr.-rod trav.mm: 14.50...14.60 Calibrating oil Del.quantity cm3/: 23.7...23.9 Combination no. : 9 400 231 205 Injection pump 100H.: (-) Pump designation : PES6P110A7209RS3144 Dispersion cm3/:0..4Governor : RSV400...900P7A511 Governor design. 100H.: (0.75) Customer-spec. information 2nd speed 1/min: 400 Contr.-rod trav. m: 5.80...6.00 Del.quantity cm3/: 2.3...2.8 100H.: (-) Customer : JOHN DEERE : 6619A Engine cm3/: 0.45 100H.: (0.75) TEST BENCH REQUIREMENTS Dispersion Calibrating-oil inlet temp. C : 38...42 SLEEVE POSITION Control-lever position Degree: -3 1/min: 800 Overflow valve : 1 457 413 010 Speed Cont.-rod travelmm: 0.30...1.40 Inlet press., bar: 1.50 Governor-spring reload Calibrating nozzle-holder Notch setting x : -: 9 681 343 009 assembly FULL-LOAD DELIV. AT FULL-LOAD STOP Opening pressure, bar : 172...175 1st version Speed 1/min: 800 Del.quantity cm3/: 236.5...238.5 1000H.: (233.0...241.0) cm3/: 4.0 Test inj. tubing : 1 680 750 015 Dispersion 1000Ha: (7.5) Outside diameter x Wall thickness : 6.00x1.50x600 HIGHEST RATED SPEED x Length mm 1st version Control-lever (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. position degrees: 45...53 per values Testing: 1st c-rod trav.mm : 13.50 1/min: 915...925 START OF DELIVERY Speed 2nd c-rod trav.mm : 4.00 1/min: 925...955 Prestroke mm : 3.45...3.55 Speed 3rd c-rod trav.mm : 4.00 : (3.40...3.60) 1/min: 960...990 Contr.-rod trav.mm: 10.50 Speed 4th speed 1/min: 1050 Cam sequence : 1-5-3-6-2-4 C-rod trav.mm : 0.30...1.40 LOWEST RATED SPEED I SD ang. spacing $^{\circ}$ CS: 0-60-120-180-240-300 Tolerance + - $^{\circ}$: 0.50(0.75) Control-lever position degrees: 18...26 K13

Setting point w/out aux. spring Speed 1/min: 400 Contr.-rod trav.mm: 5.40

Testing:

Speed 1/min: 100 C-rod trav.mm min: 19.00 Speed 1/min: 400 C-rod trav.mm: 5.80...6.00 C-rod trav.mm: 2.00 Speed 1/min: 505...565

: 1-10- 9- 4- 3- 6-5- 8- 7- 2 BOSCH INJ. PUMP TEST SPECIFICATIONS Cam sequence Note inst. in remarks column : KHD 15.8 K2 : 09.03.87 Test sheet SD ang. spacing CS: 0-27-72-99-144-171-Edition Superceeded : 20.10.86 216-243-288-315 Tolerance + - 0 Calibrating oil : ISQ-4113 : 0.50 (0.75) Combination no. : 0 400 649 173 SD mark cyl. no. : 1 Injection pump BASIC SETTING Pump designation : PE10A85D610/4LS2243 EP type number : 0 410 689 993 1/mi: 1325 1st speed Governor Governor design. : RQV300...1325AB938DL Contr.-rod trav.mm: 10.70...10.80 Governer no. : 0 420 214 209 Del.quantity cm3/: 7.8...7.9 Customer-spec. information Customer : KHD 100H.: (7.6...8.1) Engine : F10L413 Dispersion cm3/:0.3: 213.3 1st version kW 100H.: (0.4) 1/min: 2650 Speed 1/min: 300.0 2nd speed TEST BENCH REQUIREMENTS Contr.-rod trav. m: 6.9. .. 7.1 Del.quantity cm3/: 1.0...1.6 100H:: (0.8...1.8) Dispersion cm3/: 0.2 100H:: (0.4) Calibrating-oil inlet temp. C : 38...42 Overflow valve : 1 417 413 000 SLEEVE POSITION Control-lever position Inlet press., bar : 1.00 Degree: -1 Speed 17min: 1340 Cont.-rod travelmm: 15.20...17.80 Calibrating nozzle-holder : 0 681 343 009 assembly FULL-LOAD DELIY. AT FULL-LOAD STOP Opening pressure, bar : 172...175 1st version Speed 1/min: 1325 Del.quantity cm3/: 78.0...79.0 1000H:: (76.0...81.0) Dispersion cm3/: 3.00 1000H:: (4.50) : 1 680 750 014 Test inj. tubing Outside diameter x Wall thickness : 6.00x2.00x600 HIGHEST RATED SPEED x Length mm 1st version (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. Control-lever position degrees: 62...70 per values Testing: 1st c-rod trav.mm: 9.70 1/min : 1365...1375 START OF DELIVERY Speed 2nd c-rod trav.mm: 4.00 Test pressure, bar: 25...27 1/min: 1425...1455 Speed Prestroke mm : 1.50...1.60 4th speed 1/min : 1500 : (1.45...1.65) C-rod trav.mm : 0.00...1.00 Contr.-rod trav.mm: 9.00...12.00

```
LOWEST RATED SPEED I
Control-lever
 position degrees: 10...18
Testing:
               1/min : 100
Speed
C-rod trav.mm min: 8.50
Speed 1/min: 300
C-rod tray mm : 6.90...7.10
               mm : 2.00
1/min : 755...785
C-rod trav.mm
Speed
TORQUE CONTROL
Dimension a mm : 0.70
Torque-control curve - 1st version
1st speed 1/min: 1325
C-rod trav.mm: 10.70...10.80
2nd speed 1/min: 600
  C-rod trav.mm : 11.30...11.50
SWITCH-OVER POINT
               1/min : 220 (240)
Speed
FUEL-DELIVERY CHARACTERISTICS
Speed 1/min: 800
Del.quantity cm3/: 76.0...79.0
1000H: (73.5...81.5)
Speed 1/min: 1000
Del.quantity cm3/: 76.5...79.5
1000H: (74.0...82.0)
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BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Note inst. in remarks column Test sheet Edition Superceeded : DAF 8,3 N 7 : 09.03.87 SD mark cyl. no. : 1 : 12.09.86 START OF DELIVERY DIFFERENCE Calibrating oil : ISO-4113 betw.c-rod trav.mm: 8.50...9.50 Difference CS : 3.00...4.00 Combination no. : 0 400 676 178 BASIC SETTING Injection pump Pump designation : PE6A95D41ORS2575 EP type number : 0 410 696 984 1st speed 1/mi: 700 Governor Governor design. : RSV250...750A7C2201L Contr.-rod trav.mm: 13.20...13.30 Governer no. : 0 420 232 444 Del.quantity cm3/: 11.0...11.2 Customer-spec. information Customer : DAF 100H.: (10.8...11.4) cm3/:0.3Engine : DHTD 825 Dispersion 100H.: (0.6) TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. C 2nd speed 1/min: 250.0 Contr.-rod trav. m: 6.0...6.2 : 38...42 Del.quantity cm3/: 0.7...1.3 100H.: (0.5...1.4) Dispersion cm3/: 0.3 100H.: (0.5) Overflow valve : 1 417 413 000 Inlet press., bar : 1.50 SLEEVE POSITION Control-lever position Calibrating nozzle-holder Degree: -3 : 0 681 343 009 assembly Speed 17min: 800 Cont.-rod travelmm: 0.30...0.70 Opening pressure, bar : 172...175 FULL-LOAD DELIV. AT FULL-LOAD STOP Test inj. tubing : 1 680 750 015 1st version 1/min: 700 Speed Del.quantity cm3/: 110.0...112.0 1000H.: (108.0...114.0) Dispersion cm3/: 3.50 Outside diameter x Wall thickness x Length mm : 6.00x1.50x600 1000H.: (6.00) (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. HIGHEST RATED SPEED 1st version per values ____ Control-lever position degrees: 40...48 START OF DELIVERY Testing: Test pressure, bar: 25...27 1st c-rod trav.mm : 12.20 Speed 1/min: 750...755 Prestroke mm : 2.00...2.10 2nd c-rod trav.mm : 4.00 Speed 1/min : 780...795 4th speed 1/min : 950 : (1.95...2.15) Contr.-rod trav.mm: 7.50...10.50 Cam sequence : 1- 5- 3- 6- 2- 4 C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever

position degrees: 19...27
Setting point w/out aux. spring
Speed 1/min: 250
Contr.-rod trav.mm: 6.1

Speed 1/min: 250 C-rod trav.mm: 6.00...6.20 C-rod trav.mm: 2.00 Speed 1/min: 280...340

SET IDLE AUXILIARY SPRING

Contr.-rod trav.mm: 2.00

BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75) Note inst. in remarks column Test sheet : DAF 8,3 I 6 : 09.03.87 SD mark cyl. no. : 1 Edition Superceeded : 12.09.86 START OF DELIVERY DIFFERENCE Calibrating oil : ISO-4113 betw.c-rod trav.mm: 8.50...9.50 Difference CS: 4.50...5.50 Combination no. : 0 400 676 182 Injection pump BASIC SETTING Pump designation : PE6A90D410RS2524 EP type number : 0 410 696 179 1st speed 1/mi: 700 Governor Governor design. : RSV250...750A7C2201L Contr.-rod trav.mm: 9.70...9.80 Governer no. : 0 420 232 444 Del.quantity cm3/: 8.2...8.4 Customer-spec. information Customer : DAF 100H.: (8.0...8.6) Engine : DH 825 cm3/:0.4Dispersion TEST BENCH REQUIREMENTS 100H.: (0.5) Calibrating-oil inlet temp. OC 1/min: 250.0 2nd speed inlet temp. : 38...42 Contr.-rod trav. m: 6.3...6.5 Del.quantity cm3/: 1.9...2.5 100H.: (1.7...2.7) Dispersion cm3/: 0.2 100H.: (0.4) Overflow valve : 1 417 413 000 Inlet press., bar : 1.50 SLEEVE POSITION Calibrating nozzle-holder Control-lever position : 0 681 343 009 Degree: -3 1/min: 800 assembly Speed Cont.-rod travelmm: 0.30...1.00 Opening pressure, bar : 172...175 Governor-spring reload Notch setting x : 4.50 Test inj. tubing : 1 680 750 015 FULL-LOAD DELIV. AT FULL-LOAD STOP Outside diameter x Wall thickness 1st version : 6.00x1.50x600 Speed x Length mm 1/min: 700 Del.quantity cm3/: 82.5...84.5 1000H.: (80.5...86.5) (A) Injection pump setting values cm3/ : 4.00 1000H.: (5.50) Insp. values in parentheses Set constant delivery quant. Dispersion per values HIGHEST RATED SPEED START OF DELIVERY 1st version Test pressure, bar: 25...27 Control-lever position degrees: 40...48 : 2.30...2.40 Prestroke mm : (2.25...2.45) Testing: Contr.-rod trav.mm: 9.00...12.00 1st c-rod trav.mm : 8.70 Speed 1/min: 750...755 2nd c-rod trav.mm: 4.00 Cam sequence : 1-5-3-6-2-4 Speed 1/min: 780...795 K19

4th speed 1/min: 950 C-rod trav.mm : 0.30...1.40

LOWEST RATED SPEED I

Control-lever

position degrees: 24...32 Setting point w/out aux. spring Speed 1/min: 250 Contr.-rod trav.mm: 6.4 1/min : 250

Speed 1/min: 250 C-rod trav.mm : 6.30...6.50 C-rod trav.mm : 2.00 Speed 1/min: 295...355

SET IDLE AUXILIARY SPRING Contr.-rod trav.mm: 2.00

Remarks:

Cold-start testing of RSV governor according to VDT-I-420/114.

BOSCH INJ. PUMP TEST SPECIFICATIONS Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1-5-3-6-2-4 Note inst. in remarks column Test sheet : KHD 6.1 N Edition : 09.03.87 Superceeded : 14.11.86 SD ang. spacing 0 CS: 0-60-120-180-240-300 Tolerance + - 0 : 0.50 (0.75) : 14.11.86 Calibrating oil : ISO-4113 BASIC SETTING Combination no. : 0 400 836 034 1st speed 1/mi: 1250 Injection pump Pump designation : PES6A85D410/3RS2730 Contr.-rod trav.mm: 13.20...13.30 : 0 410 886 897 EP type number Del.quantity cm3/: 8.4...8.5 Governor Governor design. : RQV300...1250AB1188-100H.: (8.2...8.7) 1L Governer no. : 0 420 212 205 cm3/:0.3Dispersion Customer-spec. information Customer 100H.: (0.4) : KHD 2nd speed 1/min: 300.0 Contr.-rod trav. m: 5.9...6.1 Del.quantity cm3/: 1.4...2.0 100H:: (1.2...2.2) : BF6L913 Engine 1st version kW : 110.0 1/min: 2500 Speed cm3/:0.2Dispersion 100H.: (0.4) TEST BENCH REQUIREMENTS (B) Setting of injection pump with externally-mounted governor Calibrat@ng-oil inlet temp. OC : 38...42 SLEEVE TRAVELS Overflow valve : 1 417 413 000 1st speed 1/min: 300 Sleeve travel mm: 1.20...1.30 2nd speed 1/min: 370 Inlet press., bar: 1.00 Sleeve travel mm: 2.30...2.60 3rd speed 1/min: 540
Sleeve travel mm: 3.20...3.80
4th speed 1/min: 1290
Sleeve travel mm: 8.50...8.70 Calibrating nozzle-holder : 0 681 343 009 assembly ` Opening pressure, bar : 172...175 5th speed 1/min: 1335 Sleeve travel mm: 9.50...9.70 Test inj. tubing : 1 680 750 014 SLEEVE POSITION Control-lever position Degree: -1 Speed 1/min: 1290 Cont.-rod travelmm: 15.20...17.80 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600 FULL-LOAD DELIV. AT FULL-LOAD STOP (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. 1st version per values 1/min: 1250 Speed Charge press. hPa: 900
Del.quantity cm3/: 84.5...85.5
1000H: (82.5...87.5)
Dispersion cm3/: 3.00 START OF DELIVERY Test pressure, bar: 25...27 1000H.: (4.50) Prestroke mm : 2.20...2.30 : (2.15...2.35)

K21

HIGHEST RATED SPEED 1st version Control-lever position degrees: 63...71 Testing: 1st c-rod trav.mm : 12.20 1/min : 1290...1300 Speed 2nd c-rod trav.mm : 4.00 1/min : 1385...1415 Speed 4th speed 1/min : 1550 C-rod tray.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 10...18 Testing: Speed 1/min : 100 C-rod trav.mm min : 7.50 Speed 1/min: 300 C-rod trav.mm : 5.90...6.10 CONSTANT REGULATION 1/min : 360...470 Speed TORQUE CONTROL Dimension a mm : 0.80 Torque-control curve - 1st version 1st speed 1/min : 1250 C-rod trav.mm : 13.20...13.30 1/min : 500 2nd speed C-rod trav.mm : 14.00...14.10 3rd speed 1/min : 740 C-rod trav.mm : 13.70...13.90 4th speed 1/min: 850 C-rod trav.mm : 13.40...13.50 compensator (LDA, ADA, ALDA) 1st version Setting 1/min: 500 Speed : 900 Pressure hPa Contr.-rod trav.mm: 13.40...13.50 Measurement 1/min : 500 Speed 1st pressure hPa : -C-rod trav.mm : 11.80...11.90 2nd pressure hPa : 425 C-rod trav.mm : 12.90...13.00 3rd pressure hPa : 320 C-rod trav.mm : 12.10...12.30 SWITCH-OVER POINT

1/min : 220 (240)

FUEL-DELIVERY CHARACTERISTICS
Charge press. hPa: 900
Speed 1/min: 850
Del.quantity cm3/: 81.0...83.0
1000H.: (78.5...85.5)
Charge press. hPa: Speed 1/min: 500
Del.quantity cm3/: 54.0...56.0
1000H.: (52.0...58.0)

Remarks:

Speed

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : MB 4.0 A 4

Edition : 9.3.87

Superceeded

Calibrating oil : ISO-4113

Combination no. : 0 400 844 088

Injection pump

Pump designation : PES4A90D410RS2666-1

EP type number : 0 410 894 032

Governor

Governor design. : RQV300...1400AB1065-

10L

Governer no. : 0 420 212 203

Customer-spec. information

Customer : DAIMLER-BENZ

: 0M364 Engine

1st version kW : 66.0 1/min: 2800 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil inlet temp. C

: 38...42

Overflow valve

: 1 417 413 000

Inlet press., bar : 1.00

Calibrating nozzle-holder

: 0 681 343 009 assembly

Opening

pressure, bar : 172...175

Test inj. tubing : 1 680 750 015

Outside diameter

x Wall thickness

x Length mm : 6.00x1.50x600

(A) Injection pump setting values Insp. values in parentheses Set constant delivery quant.

per values ____

START OF DELIVERY

Test pressure, bar: 25...27

: 2.25...2.35 Prestroke mm

: (2.20...2.40)

Contr.-rod trav.mm: 9.00...12.00 Control-lever Cam sequence : 1- 3- 4- 2 position degrees: 57...65 Testing: 1st c-rod trav.mm : 9.90 Speed 1/min : 1440...1450 2nd c-rod trav.mm : 4.00 SD ang. spacing CS: 0-90-180-270 Tolerance + - : 0.50 (0.75) Speed 1/min: 1545...1575 4th speed 1/min: 1630 BASIC SETTING C-rod trav.mm : 0.00...1.00 1/mi: 1400 1st speed LOWEST RATED SPEED I Contr.-rod trav.mm: 10.90...11.00 Control-lever position degrees: 20...28 Del.quantity cm3/ : 6.3...6.4 Testing: 100H.: (6.1...6.6) Speed 1/min : 100 C-rod trav.mm min: 10.20 Speed 1/min: 300 cm3/:0.3Dispersion C-rod tray.mm : 8.60...8.80 100H.: (0.4) CONSTANT REGULATION 2nd speed 1/min: 300.0 Speed 1/min : 540...680 Contr.-rod trav. m: 8.6...8.8 Del.quantity cm3/: 0.8...1.2 100H.: (0.6...1.4) TORQUE CONTROL Dimension a mm : 1.00 cm3/: 0.2 100H.: (0.4) Dispersion Torque-control curve - 1st version 1st speed 1/min: 1400 C-rod trav.mm : 10.90...11.00 2nd speed 1/min: 500 (B) Setting of injection pump with C-rod trav.mm : 11.90...12.00 3rd speed 1/min : 700 externally-mounted governor C-rod trav.mm : 11.50...11.80 4th speed 1/min : 900 SLEEVE TRAVELS 1st speed 1/min: 300 Sleeve travel mm: 0.80...1.30 C-rod trav.mm : 11.30...11.50 2nd speed 1/min: 500
Sleeve travel mm: 2.30...2.80
3rd speed 1/min: 750 SWITCH-OVER POINT Speed 1/min : 220 (240) Sleeve travel mm: 4.10...4.30 4th speed 1/min: 1500 Sleeve travel mm: 8.50...8.60 FUEL-DELIVERY CHARACTERISTICS Speed 1/min: 500
Del.quantity cm3/: 50.0...53.0
1000H.: (47.5...55.5) SLEEVE POSITION cm3/:-1000H.: (5.50) Control-lever position Dispersion Degree: -1 1/min : 900 17min: 1500 Speed Speed Del.quantity cm3/: 52.5...55.5 1000H:: (50.0...58.0) Cont.-rod travelmm: 15.20...17.80 FULL-LOAD DELIV. AT FULL-LOAD STOP 1st version 1/min: 1400 Speed Del.quantity cm3/: 63.5...64.5 Remarks: 1000H.: (61.5...66.5) cm3/ : 3.00 1000H.: (4.50) Dispersion HIGHEST RATED SPEED

1st version

| | BOSCH INJ. PUMP TEST SPECIFICATIONS | |
|---|---|---|
| | Note inst. in remarks column | SD ang. spacing ⁰ CS: 0-120-240 Tolerance + - : 0.50 (0.75) |
| | Test sheet : KHD 3.0 C Edition : 09.03.87 Superceeded : 20.10.86 Calibrating oil : ISO-4113 | BASIC SETTING |
| | Superceeded : 20.10.86 Calibrating oil : ISO-4113 | 1st speed 1/mi: 1050 |
| | Combination no. : 0 400 863 911 | Contrrod trav.mm: 8.909.00 |
| | Injection pump Pump designation : PES3A90D410/3RS2720 | Del.quantity cm3/: 6.06.1 |
| | EP type number : 0 410 893 005 Governor | 100H.: (5.86.3) |
| | Governor design. : RSV3251150A0C2219 | Dispersion cm3/: 0.3 |
| | Governer no. : 0 420 232 466 | 100H.: (0.4) |
| | Customer-spec. information Customer : KHD | 2nd speed |
| | Engine : F3L913G | Del.quantity cm3/: 0.91.5 100H.: (0.71.7) Dispersion cm3/: 0.2 |
| | TEST BENCH REQUIREMENTS | Dispersion cm3/: 0.2 100H.: (0.4) |
| | Calibrating-oil inlet temp. °C : 3842 | SLEEVE POSITION Control-lever position Degree: -3 |
| | Overflow valve : 1 417 413 000 | Speed 17min: 800 Controd travelmm: 0.300.70 |
| | Inlet press., bar : 1.00 | Governor-spring reload Notch setting x : 5.25 |
| | Calibrating nozzle-holder assembly : 0 681 343 009 | FULL-LOAD DELIV. AT FULL-LOAD STOP |
| | Opening pressure, bar : 172175 | 1st version Speed 1/min: 1050 Del.quantity cm3/: 60.061.0 1000H.: (58.063.0) |
| | Test inj. tubing : 1 680 750 014 | 1000H.: (58.063.0) Dispersion cm3/ : 3.00 1000H.: (4.50) |
| | Outside diameter x Wall thickness x Length mm : 6.00x2.00x600 | HIGHEST RATED SPEED 1st version Control-lever |
| | (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant, per values | position degrees: 5664 Testing: 1st c-rod trav.mm : 7.90 Speed 1/min : 10901100 |
| | START OF DELIVERY Test pressure, bar: 2527 | 2nd c-rod trav.mm : 4.00 Speed 1/min : 11151145 3rd c-rod trav.mm : 4.00 |
| | Prestroke mm : 2.502.60 (2.452.65) Contrrod trav.mm: 9.0012.00 | Speed 1/min: 11401170 4th speed 1/min: 1305 C-rod trav.mm: 0.301.40 |
| | Cam sequênce : 1- 3- 2 | LOWEST RATED SPEED I |
| ı | | |

Control-lever position degrees: 24...32
Setting point w/out aux. spring
Speed 1/min: 375 Contr.-rod trav.mm: 6.4 Testing: Speed 1/min : 100 C-rod trav.mm min: 19.50 Speed 1/min: 375 C-rod trav.mm : 6.30...6.50 C-rod trav.mm : 2.00 1/min : 525...585 Speed TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min : 1050 C-rod trav.mm : 8.90...9.00 2nd speed 1/min: 500 C-rod trav.mm : 9.60...9.70 4th speed 1/min : 705 C-rod trav.mm : 9.20...9.40 FUEL-DELIVERY CHARACTERISTICS Speed 1/min : 600 Del.quantity cm3/: 50.5...52.5 1000H.: (48.0...55.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing CS: 0-90-180-270 Tolerance + - 0.50 (0.75) Note inst. in remarks column Test_sheet : KHD 4.1 D 6 : 09.03.87 BASIC SETTING Edition Superceeded : 1.12.86 1st speed 1/mi: 1250 Calibrating oil : ISO-4113 Centr.-rod trav.mm: 12.60...12.70 : 0 400 864 067 Combination no. Del.quantity cm3/: 8.3...8.4 Injection pump Pump designation : PES4A85D410/3RS2638 100H.: (8.1...8.6) EP type number : 0 410 884 950 Governor cm3/:0.3Dispersion Governor design. : RSV325...1400A8C661L 100H.: (0.5) Governer no. : 0 420 232 327 Customer-spec. information 2nd speed 1/min: 325.0 Contr.-rod trav. m: 8.5...8.7 Customer · KHD Del.quantity cm3/: 1.0...1.6 100H.: (0.8...1.8) cm3/: 0.2 100H.: (0.4) Engine : BF4L913 Dispersion TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. ^DC SLEEVE POSITION : 38...42 Control-lever position Degree: -3 17min: 800 Speed Overflow valve Cont.-rod travelmm: 0.30...0.70 : 1 417 413 000 Inlet press., bar: 1.00 Governor-spring reload Notch setting x : 4.00 Calibrating nozzie-holder : 0 681 343 009 FULL-LOAD DELIV. AT FULL-LOAD STOP assembly 1st version Opening pressure, bar : 172...175 1/min: 1250 Speed Del.quantity cm3/: 83.5...84.5 1000H:: (81.5...86.5) Dispersion cm3/: 3.00 Test inj. tubing : 1 680 750 014 1000H.: (5.00) Outside diameter HIGHEST RATED SPEED x Wall thickness : 6.00X2.00X600 1st version x Length mm Control-lever position degrees: 54...62 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. Testing: per values 1st c-rod trav.mm : 11.60 Speed 1/min: 1290...1300 2nd c-rod trav.mm: 4.00 START OF DELIVERY Speed 1/min : 1325...1355 Test pressure, bar: 25...27 3rd c-rod trav.mm: 4.00 Speed 1/min: 1385...1415 4th speed 1/min: 1540 : 2.50...2.60 Prestroke mm : (2.45...2.65) : 0.30...1.40 Contr.-rod trav.mm: 9.00...12.00 C-rod trav.mm Cam sequence : 1- 3- 4- 2 LOWEST RATED SPEED I Control-lever

position degrees: 15...23 Setting point w/out aux. spring 1/min : 325 Speed Contr.-rod trav.mm: 8.1 Testing: 1/min : 100 Speed C-rod trav.mm min : 19.50 Speed 1/min : 325 : 8.00...8.20 C-rod trav.mm : 2.00 C-rod trav.mm 1/min : 620...680 Speed TORQUE CONTROL Torque-control curve - 1st version 1/min : 1250 1st speed C-rod trav.mm : 12.60...12.70 2nd speed 1/min : 500 C-rod trav.mm : 13.50...13.60 4th speed 1/min: 1020 C-rod trav.mm : 12.90...13.10 FUEL-DELIVERY CHARACTERISTICS Speed 1/min: 500
Del.quantity cm3/: 77.0.,.79.0
1000H.: (74.5...81.5)
Speed 1/min: 825 Del.quantity cm3/: 85.0...87.0 1000H.: (82.5...89.5)

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                        Contr.-rod trav.mm: 7.50...10.50
                                                        Cam seguence : 1-5-3-6-2-4
Note inst. in remarks column
Test sheet
                    : DAF 6,2 0 2
: 09.03.87
                                                        SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - 0 : 0.50 (0.75)
Superceeded
                   : 12.9.86
                  : ISO-4113
Calibrating oil
                                                        SD mark cyl. no. : 1
Combination no.
                     : 0 400 876 332
                                                        START OF DELIVERY DIFFERENCE
Injection pump
Pump designation : PES6A95D32ORS2693
                                                       betw.c-rod trav.mm: 8.50...9.50
Difference CS : 2.50...3.50
EP type number
                     : 0 410 896 914
Governor
Governor design.
                     : RSV300...1300A0C2206
                                                        BASIC SETTING
                     : 0 420 233 204
                                                                       1/mi: 850
Governer no.
                                                        1st speed
                                                        Contr.-rod trav.mm: 10.80...10.90
Customer-spec. information
Customer
                     : DAF
                                                        Del.quantity cm3/ : 6.4...6.6
Engine
                     : DNTD 620
                                                                      100H.: (6.2...6.8)
1st version kW : 110.0
                                                                      cm3/:0.3
               1/min: 2600
Speed
                                                       Dispersion
TEST BENCH REQUIREMENTS
                                                                      100H.: (0.6)
                                                       2nd speed 1/min: 300.0

Contr.-rod trav. m: 6.3...6.5

Del.quantity cm3/: 0.7...1.1

100H.: (0.4...1.3)

Dispersion cm3/: 0.3
Calibrating-oil inlet temp. °C
                     : 38...42
Overflow valve
                     : 1 417 413 000
                                                                      100H.: (0.5)
Inlet press., bar : 1.50
                                                        SLEEVE POSITION
                                                       Control-lever position
Calibrating nozzle-holder
              : 0 681 343 009
                                                                     Degree: -3
1/min: 800
 assembly
                                                       Speed
Opening
                                                       Cont.-rod travelmm: 0.30...0.70
 pressure, bar : 172...175
                                                       Governor-spring reload
                                                       Notch setting x : 5.50
Test inj. tubing : 1 680 750 015
                                                       FULL-LOAD DELIV. AT FULL-LOAD STOP
Outside diamater
x Wall thickedss
                                                        1st version
                                                                      1/min: 850
x Length mm
                    : 6.00x1.50x600
                                                       Speed
                                                       Del.quantity cm3/: 64.0...66.0
                                                                     1000H.: (62.0...68.0)
cm3/: 3.50
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                       Dispersion
                                                                     1000H.: (6.00)
    per values
                                                       HIGHEST RATED SPEED
START OF DELIVERY
                                                       1st version
                                                       Control-lever
Test pressure, bar: 25...27
                                                        position degrees: 56...64
                   : 2.00...2.10
Prestroke mm
                    : (1.95...2.15)
                                                       Testing:
L02
```

1st c-rod trav.mm : 9.20 Speed 1/min : 1340...1350 2nd c-rod trav.mm : 4.00 Speed 1/min: 1400...1430 3rd c-rod trav.mm: 4.00 Speed 1/min: 1425...1455 4th speed 1/min: 1570 C-rod trav.mm : 0.30...1.40 LOWEST RATED SPEED I Control-lever position degrees: 25...33 Setting point w/out aux. spring 1/min : 300 Contr.-rod trav.mm: 5.9 Testing: Speed 1/min: 100 C-rod trav.mm min: 19.50 Speed 1/min: 300 C-rod trav.mm : 6.30...6.50 C-rod trav.mm : 2.00 1/min : 590...650 Speed TORQUE CONTROL Torque-control curve - 1st version 1st speed 1/min: 1290 C-rod trav.mm: 10.20...10.40 2nd speed 1/min: 500 C-rod trav.mm : 10.80...10.90 4th speed 1/min: 1005 C-rod trav.mm : 10.50...10.70 FUEL-DELIVERY CHARACTERISTICS Speed 1/min : 1290 Del.quantity cm3/: 69.0...71.0 1000H.: (66.5...73.5)

BOSCH INJ. PUMP TEST SPECIFICATIONS : 4.00...4.10 Prestroke mm Note inst. in remarks column : (3.95...4.15) Contr.-rod trav.mm: 9.00...12.00 Test sheet : 12- 1- 5- 9- 8-: MB 21,9 B 6 Cam sequence - 4- 11- 10- 2- 6- 7 : 12.09.86 Edition Superceeded Calibrating oil : ISO-4113 SD ang. spacing CS: 0-45-60-105-120-165-SD ang. spacing CS: 180-225-240-285-300-: 0 401 840 740 Combination no. Injection pump Tolerance + - 0 : PE12P12OA32OLS3819-1 : 0.50 (0.75) Pump designation EP type number : 0 411 820 718 SD mark cyl. no. : 12 Governor Governor design. : RQV350...1150PA493-2 BASIC SETTING : 0 421 813 367 Governer no. 1st speed 1/mi: 1150 Customer-spec. information Contr.-rod trav.mm: 11.10...11.20 Customer : DAIMLER-BENZ Del.quantity cm3/: 15.9...16.1 : 0M 424 A Engine 100H.: (15.6...16.4) 1st version kW : 390.0 1/min: 2300 Speed cm3/: 0.5Dispersion TEST BENCH REQUIREMENTS 100H.: (0.8) Calibrating-oil inlet temp. °C : 38...42 2nd speed 1/min: 350.0 Contr.-rod trav. m: 4.8...5.0 Del.quantity cm3/: 1.4...2.0 100H.: (1.1...2.3) Dispersion cm3/: 0.8 Inlet press., bar : 1.50 Over flow 100H.: (1.2) quantity min. 1/h: 150...170 SLEEVE POSITION Calibrating nozzle-holder : 1 688 901 019 1/min; 1150 assembly Speed Cont.-rod travelmm: 15.20...17.80 Opening FULL-LOAD DELIV. AT FULL-LOAD STOP : 207...210 pressure, bar Perforated-plate 1st version : 0,8 Speed 1/min: 1150 diameter mm Charge press. hPa : 600 Del.quantity cm3/: 159.0...161.0 1000H.: (156.0...164.0) Test inj. tubing : 1 680 750 067 Dispersion cm3/ : 5.00 1000H.: (8.00) Outside diameter x Wall thickness x Length mm : 6.00x1.50x1000 HIGHEST RATED SPEED 1st version Control-lever (A) Injection pump setting values Imsp. values in parentheses Set constant delivery quant. position degrees: 65...73 per values ____ Testing: 1st c-rod trav.mm : 10.10 START OF DELIVERY Speed 1/min: 1190...1200 2nd c-rod trav.mm : 4.00 Test pressure, bar: 25...27 L04

```
Speed
             1/min : 1280...1310
             1/min : 1375
4th speed
  C-rod trav.mm
                    : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 9...17
Testing:
             1/min : 100
Speed
C-rod trav.mm min: 8.50
Speed
             1/min : 350
C-rod trav.mm
                    : 5.10...5.30
CONSTANT REGULATION
             1/min : 400...600
Speed
 compensator (LDA, ADA, ALDA)
1st version
Setting
             1/min : 500
Speed
                  : 600
Pressure
             hPa
Contr.-rod trav.mm: 11.10...11.20
Measurement
             1/min : 500
Speed
1st pressure hPa
                    : 10.00...10.20
  C-rod trav.mm
                    : 380
2nd pressure hPa
                    : 10.80...10.90
  C-rod trav.mm
3rd pressure hPa : 320
                    : 10.10...10.30
  C-rod trav.mm
SWITCH-OVER POINT
             1/min : 270 (290)
Speed
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa : 600
             1/min : 650
Speed
Del.quantity cm3/: 160.0...156.0
1000H.: (157.0...169.0)
Charge press. hPa : -
Speed 1/min : 5
Speed 1/min: 500
Del.quantity cm3/: 127.0...129.0
1000H.: (124.0...132.0)
Charge press. hPa : -
             1/min: 1150
Speed
Del.quantity cm3/: 118.0...121.0 *
             1000H.: (115.0...124.0)
```

BOSCH INJ. PUMP TEST SPECIFICATIONS : 4.00...4.10 : (3.95...4.15) Prestroke mm Note inst. in remarks column Contr.-rod trav.mm: 9.00...12.00 : MB 21,9 K 4 : 25.03.87 - 4- 11- 10- 2- 6- 7 Cam sequence : 12- 1- 5- 9- 8-Test sheet Edition Superceeded Calibrating oil : ISO-4113 SD ang. spacing CS: 0-45-60-105-120-165-SD ang. spacing CS: 180-225-240-285-300-: 0 401 840 740 Combination ng. Injection pump Tolerance + - 0: 0.50 (0.75) Pump designation : PE12P120A320LS3836-1 : 0 411 820 718 EP type number SD mark cyl. no. : 12 Governor Governor design. : RQV350...1150PA493-2 BASIC SETTING Governer no. : 0 421 813 367 1/mi: 1150 1st speed Customer-spec. information Contr.-rod trav.mm: 11.10...11.20 Customer : DAIMLER-BENZ Engine : OM 424 A Del.quantity cm3/: 15.9...16.1 1st version kW : 390.0 100H.: (15.6...16.4) 1/min: 2300 Speed Dispersion cm3/:0.5TEST BENCH REQUIREMENTS 100H.: (0.8) Calibrating-oil inlet temp. °C : 38...42 2nd speed 1/min: 350.0 Contri-rod trav. m: 4.8...5.0 Del.quantity cm3/: 1.4...2.0 100H:: (1.1...2.3) Dispersion cm3/: 0.8 100H:: (1.2) Inlet press., bar: 1.50 Over flow quantity min. 1/h: 150...170 SLEEVE POSITION Calibrating nozzle-holder : 1 688 901 019 1/min: 1150 assembly Cont.-rod travelmm: 15.20...17.80 Opening : 207...210 FULL-LOAD DELIV. AT FULL-LOAD STOP pressure, bar 1st version Perforated-plate Speed diameter mm : 0,8 1/min: 1150 Charge press. hPa : 600 Del.quantity cm3/: 159.0...161.0 1000H.: (156.0...164.0) Dispersion cm3/: 5.00 Test inj. tubing : 1 680 750 067 1000H.: (8.00) Outside diameter x Wall thickness : 6.00x1.50x1000 HIGHEST RATED SPEED x Length mm 1st version Control-lever (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. position degrees: 65...73 per values ____ Testing: 1st c-rod trav.mm : 10.10 Speed 1/min: 1190...1200 START OF DELIVERY Test pressure, bar: 25...27 2nd c-rod trav.mm: 4.00 L06

```
1/min : 1280...1310
  Speed
            1/min : 1375
4th speed
                   : 0.00...1.00
  C-rod trav.mm
LOWEST RATED SPEED I
Control-lever
 position degrees: 9...17
Testing:
             1/min : 100
Speed
C-rod trav.mm min: 6.60
            1/min : 350
mm : 5.10...5.30
Speed
C-rod trav.mm
CONSTANT REGULATION
            1/min : 400...600
Speed
 compensator (LDA,ADA,ALDA)
1st version
Setting
             1/min : 500
Speed
Pressure
            hPa
Contr.-rod trav.mm: 9.80...10.00
Measurement
            1/min: 500
Speed
1st pressure hPa : 320
                  : 9.90...10.10
  C-rod trav.mm
2nd pressure hPa : 380
                   : 10.40...10.60
  C-rod trav.mm
SWITCH-OVER POINT
            1/min: 270 (290)
Speed
FUEL-DELIVERY CHARACTERISTICS
1st version
Charge press. hPa: 600
            1/min : 650
Speed
Del.quantity cm3/: 160.0...166.0
            1000H.: (157.0...169.0)
Charge press. hPa : -
            1/min: 500
Speed
Del.quantity cm3/: 127.0...129.0
1000H.: (124.0...132.0)
Charge press. hPa: -
             1/min : 1150
Del.quantity cm3/: 118.0...121.0 *
             1000H.: (115.0...124.0)
```

```
: 1-5-3-6-2-4
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                    Cam sequence
Note inst. in remarks column
Test sheet
                                                    SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                   : DAF 11,6 X1
Edition
                   : 09.03.87
Superceeded
                   : 12.9.86
Calibrating oil
                  : ISO-4113
                                                    BASIC SETTING
                   : 0 401 846 530
Combination no.
                                                                  1/mi: 600
                                                    1st speed
Injection pump
                                                    Contr.-rod trav.mm: 12.00...12.10
Pump designation : PE6P110A320R$407-1
                                                    Del.quantity cm3/ : 13.4...13.6
EP type number
                  : 0 411 816 147
Governor
Governor design. : RQ275/1000PA818
                                                                  100H.: (13.1...13.8)
Governer no.
                  : 0 421 801 360
                                                                 cm3/:0.4
                                                    Dispersion
Customer-spec. information
                                                                  100H.: (0.7)
                   : DAF
Customer
                                                    2nd speed 1/min: 275.0 Contr.-rod trav. m: 7.3...7.5
                   : LT 160
Engine
                                                    Del.quantity cm3/: 1.4...1.9
1st version kW : 160.0
                                                                  100H.: (1.1...2.1)
             1/min: 2000
Speed
                                                                  cm3/:0.4
                                                    Dispersion
TEST BENCH REQUIREMENTS
                                                                  100H.: (0.7)
Calibrating-oil inlet temp. °C
                                                    SLEEVE POSITION
                   : 38...42
                                                    Control-lever position
                                                                Degree: -1
1/min: 600
Overflow valve
                                                    Speed
                   : 1 417 413 025
                                                    Cont.-rod travelmm: 15.60...16.40
                                                    FULL-LOAD DELIV. AT FULL-LOAD STOP
Inlet press., bar : 1.50
Calibrating nozzle-holder
                                                    1st version
                : 0 681 343 009
                                                                 1/min: 600
assembly
                                                    Speed
                                                   Del.quantity cm3/: 134.0...136.0
1000H.: (131.5...138.5)
Opening.
                                                                cm3/ : 4.00
pressure, bar : 172...175
                                                    Dispersion
                                                                1000H.: (7.50)
Test inj. tubing : 1 680 750 015
                                                   HIGHEST RATED SPEED
Outside diameter
                                                    Setting point:
x Wall thickness
                                                             1/min : 600
                                                    Speed
                : 6.00x1.50x600
                                                    Contr.-rod trav.mm: 16.0
x Length mm
                                                    Testing:
(A) Injection pump setting values
    Insp. values in parentheses
Set constant delivery quant.
                                                    1st c-rod trav.mm : 10.00
                                                      Speed 1/min: 1030...1045
                                                    2nd c-rod trav.mm : 4.00
    per values ____
                                                                1/min : 1090...1120
1/min : 1300
                                                     Speed
START OF DELIVERY
                                                    4th speed
                                                      C-rod trav.mm : 0.00...1.00
Test pressure, bar: 25...27
Prestroke mm
                   : 2,80...2.90
                                                   LOWEST RATED SPEED I
                   : (2.75...2.95)
                                                   Setting point w/out aux. spring
Contr.-rod trav.mm: 9.00...12.00
                                                            1/min : 275
                                                   Speed
L08
```

Contr.-rod trav.mm: 7.4 Testing: Speed ---1/min : 100 C-rod trav.mm min: 8.60 Speed 1/min: 275 C-rod trav.mm: 7.30...7.50 C-rod trav.mm: 2.00 Speed 1/min: 350...390 TORQUE CONTROL Dimension a mm : 0.60 Torque-control curve - 1st version 1st speed 1/min: 550_ C-rod trav.mm : 12.30...12.40 2nd speed 1/min: 980 C-rod trav.mm : 11.00...11.20 3rd speed 1/min : 745 C-rod trav.mm : 11.90...12.10 4th speed 1/min : 880 C-rod trav.mm : 11.20...11.50 FUEL-DELIVERY CHARACTERISTICS 1/min : 980 Speed Del.quantity cm3/: 112.0...116.0 1000H.: (109.0...119.0)

```
BOSCH INJ. PUMP TEST SPECIFICATIONS
                                                                          : 1-5- 3- 6- 2- 4
                                                      Cam sequence
Note inst. in remarks column
                                                      SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50 (0.75)
                    : VAL 7,2 B : 09.03.87
Test sheet
Edition
Superceeded
                   : 12.9.86
Calibrating oil : ISO-4113
                                                      SD mark cyl. no.
                    : 0 401 846 532
                                                      BASIC SETTING
Combination no.
Injection pump
                                                                      1/mi: 700
                                                      1st speed
Pump designation : PE6P110A320RS856
                    : 0 411 816 170
                                                      Contr.-rod trav.mm: 12.00...12.10
EP type number
Governor
                                                      Del.quantity cm3/: 13.9...14.1
Governor design. : RQV250...1150P. 825
                    : 0 421 813 570
Governer no.
                                                                     100H.: (13.6...14.4)
Customer-spec. information
                                                                     cm3/:0.4
Customer
                    : VALMET
                                                      Dispersion
Engine
                    : 612 DSJ
                                                                     100H.: (0.7)
                                                      2nd speed 1/min: 325.0
Contr.-rod trav. m: 7.1...7.3
1st version kW : 165.0
              1/min: 2300
Speed
                                                      Del.quantity cm3/: 1.2...1.6
                                                                     100H.: (0.9...1.8)
TEST BENCH REQUIREMENTS
                                                                    cm3/: 0.3
                                                      Dispersion
Calibrating-oil inlet temp. <sup>6</sup>C
                                                                     100H.: (0.6)
                    : 38...42
                                                       (B) Setting of injection pump with
Overflow valve
                                                           externally-mounted governor
                    : 1 417 413 025
                                                      SLEEVE TRAVELS
                                                      1st speed 1/min: 325
Inlet press., bar : 1.50
                                                        Sleeve travel mm: 2.00...2.10
                                                      2nd speed 1/min: 380
Calibrating nozzle-holder
 assembly
                   : 0 681 343 009
                                                        Sleeve travel mm: 2.30...2.70
                                                      3rd speed 1/min: 470
                                                      Steeve travel mm: 2.90...3.40
4th speed 1/min: 1200
Steeve travel mm: 8.10...8.20
Opening
pressure, bar : 172...175
                                                                   1/min: 1310
                                                      5th speed
Test inj. tubing : 1 680 750 015
                                                        Sleeve travel mm: 9.10...9.40
                                                      SLEEVE POSITION
Outside diameter
                                                      Control-lever position
x Wall thickness
                    : 6.00x1.50x600
                                                                   Degree: -1
1/min: 1240
x Length mm
                                                      Speed
                                                      Cont.-rod travelmm: 15.20...17.80
(A) Injection pump setting values
    Insp. values in parentheses
    Set constant delivery quant.
                                                      FULL-LOAD DELTV. AT FULL-LOAD STOP
    per values
                                                      1st version
START OF DELIVERY
                                                      Speed
                                                                    1/min: 700
                                                      Charge press. hPa: 700
Del.quantity cm3/: 139.0...141.0
1000H: (136.0...144.0)
Dispersion cm3/: 4.00
Test pressure, bar: 25...27
Prestroke mm
                    : 3.00...3.10
                    : (2.95...3.15)
                                                                   1000H.: (7.50)
Contr.-rod trav.mm: 9.00...12.00
L10
```

HIGHEST RATED SPEED 1st version Control-lever position degrees: 42...50 Testing: 1st c-rod trav.mm : 11.00 Speed 1/min: 1190...1200 2nd c-rod trav.mm: 4.00 Speed 1/min: 1290...1320 4th speed 1/min: 1450 C-rod trav.mm : 0.00...1.00 LOWEST RATES SPEED I Control-lever position degrees: 16...24 Testing: Speed 1/min : 100 C-rod trav.mm min : 8.60 Speed 1/min : 325 C-rod trav.mm : 7.10...7.30 CONSTANT REGULATION Speed 1/min : 325...500 compensator (LDA, ADA, ALDA) 1st version Setting Speed 1/min : 500 hPa : 700 Pressure Contr.-rod trav.mm: 12.00...12.10 Measurement Speed 1/min : 500 1st pressure hPa : -: 10.40...10.50 C-rod trav.mm 2nd pressure hPa : 415 C-rod trav.mm : 11.60...11.70 3rd pressure hPa : 270 : 10.70...10.90 C-rod trav.mm FUEL-DELIVERY CHARACTERISTICS Charge press. hPa : -1/min: 700 Speed Del.quantity cm3/: 102.5...105.5 1000H.: (100.0...108.0)

Because of flattening, set the Spring preload on new delivery-valve holders

Because of flattening, set the spring preload on new delivery-valve holders to 2.9.2.3.1 mm.

Remarks:

to 2.9...3.1 mm.

SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - : 0.50(0.75) BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column BASIC SETTING : DEE 7.6 G 4 : 5.3.87 Test sheet Edition 1/mi: 1050 1st speed Superceeded Contr.-rod trav.mm: 12.40...12.50 Calibrating oil : ISO-4113 Combination no. : 9 400 231 196 Del.quantity cm3/: 14.6...14.9 Injection pump 100H.: (-) Pump designation : PES6P110A720RS3038 cm3 : 0.4 Dispersion Governor Governor design. : RSV400...1050P2A488 100H.: (0.75) Customer-spec. information 2nd speed 1/min: 400 Customer : JOHN DEERE Contr.-rod trav. m: 6.60...6.80 Del.quantity cm3/: 1.35...1.85 : 6466 AF 100H.: (-) Engine cm3/: 0.45 100H.: (0.75) Dispersion TEST BENCH REQUIREMENTS Calibrating-oil inlet temp. C SLEEVE POSITION : 38...42 Control-lever position Degree: -3 17min: 800 Overflow valve Speed : 1 457 413 010 Cont.-rod travelmm: 0.30...0.70 FULL-LOAD DELIV. AT FULL-LOAD STOP Inlet press., bar: 1.5 Calibrating nozzle-holder 1st version : 0 681 343 009 Speed 1/min: 1050 assembly Charge press. hPa : 1200 Del.quantity cm3/: 146.5...149.5 1000H.: (144.0...152.0) Opening : 172...175 pressure, bar HIGHEST RATED SPEED Test inj. tubing : 1 680 750 015 1st version Control-lever position degrees: 41...49 Outside diameter x Wall thickness x Length mm : 6.00x1.50x600 Testing: 1st carod trav.mm : 11.40 Special 1/min : 1095... 1/min : 1095...1105 (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. 2nd c-rod trav.mm : 4.00 1/min: 1175...1205 Speed 3rd c-rod trav.mm : 4.00 per values ____ 1/min : 1185...1215 Speed 1/min : 0.30...1.40 START OF DELIVERY 4th speed : 1300 C-rod trav.mm Prestroke mm : 3.45...3.55 : (3.40...3.60) LOWEST RATED SPEED I Contr.-rod trav.mm: 10.50 Control-lever Cam sequence : 1-5-3-6-2-4 position degrees: 19...27 Lesting: 1/min : 400 Speed C-rod trav.mm min: 6.10 L12

```
Speed 1/min: 400
C-rod trav.mm : 6.60...6.80
C-rod trav.mm : 19.000
Speed 1/min: 100
C-rod trav.mm : 2.00
Speed 1/min: 660...720

TORQUE CONTROL
Torque-control curve - 1st version
1st speed 1/min: 1050
C-rod trav.mm : 12.40...12.50
2nd speed 1/min: 700
C-rod trav.mm : 13.60...13.80

FUEL-DELIVERY CHARACTERISTICS

1st version
Charge press. hPa: 1200
Speed 1/min: 700
Del.quantity cm3/: 179.0...183.0
1000H.: (176.0...186.0)
Speed 1/min: 500
Del.quantity cm3/: -
1000H.: (88.0...98.0)
```

Remarks:

L13

BOSCH INJ. PUMP TEST SPECIFICATIONS SD ang. spacing CS: 0-60-120-180-240-300 Tolerance + - 0.50 (0.75) Note inst. in remarks column Test sheet : DAF 6,2 M 3 SD mark cyl. no. : 1 : 09.03.87 Edition Superceeded : 12.09.86 Calibrating oil : ISO-4113 START OF DELIVERY DIFFERENCE betw.c-rod trav.mm: 8.50...9.50 Difference ° CS : 3.00...4.00 : 0 400 676 181 Combination no. BASIC SETTING Injection pump Pump designation : PE6A85D32ORS2546 EP type number : 0 410 686 943 1st speed 1/mi: 700 Governor Governor design. Contr.-rod trav.mm: 12.10...12.20 : RSV250...750A7C22O2R Governer no. : 0 420 233 202 Del.quantity cm3/ : 6.6...6.8 Customer-spec. information 100H.: (6.4...7.0) Customer : DAF cm3/:0.3Engine : DF615 Dispersion TEST BENCH REQUIREMENTS 100H.: (0.5) Calibrating-oil inlet temp. OC 1/min: 250.0 2nd speed Contr.-rod trav. m: 8.4...8.6 Del.quantity cm3/: 0.9...1.5 100H.: (0.7...1.7) : 38...42 Overflow valve cm3/: 0.2 100H.: (0.4) : 1 417 413 000 Dispersion Inlet press., bar : 1.50 SLEEVE POSITION Calibrating nozzle-holder Control-lever position : 0 681 343 009 Degree: -3 1/min: 800 assembly Speed Cont.-rod travelmm: 0.30...0.70 Opening pressure, bar : 172...175 Governor-spring reload Notch setting x : 3.50 Test anj. tubing : 1 680 750 015 FULL-LOAD DELIV. AT FULL-LOAD STOP Outside diameter x Wall thickness 1st version 1/kin: 700 x Leength mm : 6.00x1.50x600 Speed Del.quantity @m3/: 66.0...68.0 7000H: (64.0...70.0) cm3/: 3.00 1000H: (5.00) (A) Injection pump setting values Insp. values in parentheses Set constant delivery quant. Dispersion per values ____ HIGHEST RATED SPEED START OF DELIVERY 1st version Control-lever Test pressure, bar: 25...27 position degrees: 40...48 : 2.15...2.25 Prestroke mm : (2.10...2.30) Testing: Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1-5-3-6-2-4 1st c-rod trav.mm : 11.10 Speed 1/min : 750...755 2nd c-rod trav.mm : 4.00 Speed 1/min : 780...795 L14

4th speed 1/min: 950 C-rod trav.mm : 0.30...1.40 LOWEST RATED SPEED I

Control-lever

position degrees: 23...31
Setting point w/out aux. spring
Speed 1/min: 250
Contr.-rod trav.mm: 8.5

Speed 1/min: 250 C-rod trav.mm: 8.40...8.60 C-rod trav.mm: 2.00 Speed 1/min: 295...355

SET IDLE AUXILIARY SPRING Contr.-rod trav.mm: 2.00

Contr.-rod trav.mm: 9.00...12.00 Cam sequence : 1- 3- 4- 2 BOSCH INJ. PUMP TEST SPECIFICATIONS Note inst. in remarks column : MB 4,0 A 3 : 30.03.87 Test sheet SD ang. spacing 0 CS: 0-90-180-270 Tolerance + - 0 : 0.50 (0.75) Edition : 12.09.86 Superceeded : ISO-4113 Calibrating oil BASIC SETTING Combination no. : 0 400 844 087 1st speed 1/mi: 1400 Injection pump Contr.-rod trav.mm: 10.90...11.00 Pump designation : PES4A90D410RS2666-1 EP type number : 0 410 894 032 Del.quantity cm3/: 6.3...6.4 Governor : RQV300...1400AB1065-Governor design. 100H.: (6.1...6.6) Governer no. : 0 420 212 169 Dispersion cm3/:0.3Customer-spec. information : DAIMLER-BENZ 100H.: (0.5) Customer 2nd speed 1/min: 300.0 Contr.-rod trav. m: 8.6...8.8 Del.quantity cm3/: 0.8...1.2 100H.: (0.6...1.4) Engine : 0M364 1st version kW : 66.0 1/min: 2800 Speed cm3/: 0.2 Dispersion TEST BENCH REQUIREMENTS 100H.: (0.4) (B) Setting of injection pump with Calibrating-oil inlet temp. OC : 38...42 externally-mounted governor Overflow valve SLEEVE TRAVELS : 1 417 413 000 1st speed 1/min: 300 Sleeve travel mm: 0.80...1.30 2nd speed 1/min: 500 Inlet press., bar: 1.00 Sleeve travel mm: 2.30...2.80 3rd speed 1/min: 750
Sleeve travel mm: 4.10...4.30
4th speed 1/min: 1500 Calibrating nozzle-holder : 0 681 343 009 assembly Sleeve travel mm: 8.50...8.60 Opening pressure, bar : 172...175 SLEEVE POSITION Control-lever position Degree: -1 1/min: 1500 Test inj. tubing : 1 680 750 015 Cont.-rod travelmm: 15.20...17.80 Outside diameter x Wall thickness : 6.00x1.50x600 FULL-LOAD DELIV. AT FULL-LOAD STOP x Length mm (A) Injection pump setting values 1st version Insp. values in parentheses Set constant delivery quant. Speed 1/min: 1400 Del.quantity cm3/: 63.0...64.0 1000H.: (61.0...66.0) cm3/ : 3.00 1000H.: (5.00) per values ____ Dispersion START OF DELIVERY Test pressure, bar: 25...27 HIGHEST RATED SPEED Prestroke mm : 2.25...2.35 1st version : (2,20,..2,40)

L16

```
Control-lever
 position degrees: 59...67
Testing:
1st c-rod trav.mm : 9.90
  Speed 1/min: 1450...1460
2nd c-rod trav.mm: 4.00
Speed 1/min: 1560...1590
4th speed 1/min: 1630
  C-rod trav.mm : 0.00...1.00
LOWEST RATED SPEED I
Control-lever
 position degrees: 20...28
Testing:
Speed
             1/min : 100
C-rod trav.mm min: 10.20
Speed 1/min: 300
C-rod trav.mm
                   : 8.60...8.80
CONSTANT REGULATION
             1/min : 540...680
Speed
TORQUE CONTROL
Dimension a mm : 1.00
Torque-control curve - 1st version
1st speed 1/min : 1400
C-rod trav.mm : 10.90...11.00
2nd speed 1/min : 630
  C-rod trav.mm : 12.20...12.30
3rd speed 1/min: 900
  C-rod trav.mm : 11.60...11.80
SWITCH-OVER POINT
             1/min : 220 (240)
Speed
FUEL-DELIVERY CHARACTERISTICS
Speed
            1/min : 630
Del.quantity cm3/: 55.5...58.5
1000H: (53.0...61.0)
Speed 1/min: 900
Del.quantity cm3/: 54.5...57.5
1000H.: (52.0...60.0)
```

. 3

Remarks:

L17

| BOSCH INJ. PUMP TES | ST SPECIFICATIONS | Prestroke mm : | 3.503.60 (3.453.65) |
|--|--|---|-------------------------------------|
| Note inst. in remar | ks column | Contra-rod trayamm: | 9.0012.00 1-5-3-6-2-4 |
| Test sheet : Edition : Superceeded : Calibrating oil : | RVI 8,8 L 12.09.86 12.85 ISO-4113 | | 0-60-120-180-240-300 0.50 (0.75) |
| Combination no. : | 0 401 846 499 | | |
| Injection pump | | SD mark cyl. no. : | 1 |
| Pump designation : EP type number : | PE6P12UA32ORS474 | BASIC SETTING | |
| Governor design. | RQV2751200PA425-3 | 1st speed 1/mi: | 1200 |
| Governer no. | 0 421 813 441 | Contrrod trav.mm: | 11.9012.00 |
| Customer-spec. info | ormation i | Del.quantity cm3/: | 15.115.3 |
| | MIDS062030 | 100H.: | (14.815.6) |
| 1st version kW : | 1 | Dispersion cm3/: | 0,5 |
| Speed 1/min: | | 100H.: | (0.9) |
| TEST BENCH REQUIREM | MENTS | 2nd speed 1/min: Contrrod trav. m: | 275.0 5.705.90 |
| Calibrating-oil inlet temp. C : | 3842 | Delaquantity cm3/: | 0.81.4 (0.51.7) |
| Overflow valve : | 1 417 413 025 | 100H.: | (1.2) |
| Inlet press., bar : | 1.50 | (B) Setting of injection externally-mount | ction pump with ted governor |
| Calibrating nozzle- assembly : | holder 1 688 901 019 | SLEEVE TRAVELS 1st speed 1/min: Sleeve travel mm: | 275 1.201.40 |
| Opening pressure, bar : | 207210 | 2nd speed 1/min: Sleeve travel mm: | 400 2.903.40 |
| Perforated-plate | ; | 3rd speed 1/min: Sleeve travel mm: | 5.806.00 |
| diameter mm : | 8,0 | 4th speed 1/min: Sleeve travel mm: | 1200 |
| Test inj. tubing : | 1 680 750 067 | SLEEVE POSITION Control-lever posit | ion |
| Outside diameter x Wall thickness | i i | Degree: Speed 1/min: | -1 |
| | 6.00x1.50x1000 | Controd travelmm: | |
| (A) Injection pump Insp. values in Set constant de | parentheses | FULL-LOAD DELIV. AT 1st version | FULL-LOAD STOP |
| per values | _ | Speed 1/min: | |
| START OF DELIVERY Test pressure, bar: | 2527 | Charge press. hPa: Del.quantity cm3/: 1000H.: | 151.0153.0 (148.0156.0) |
| | I | | |

Dispersion cm3/ : 5.00 1000H.: (9.00) HIGHEST RATED SPEED 1st version Control-lever position degrees: 61...69 Testing: 1st c-rod trav.mm : 10.90 Speed 1/min : 1265...1275 2nd c-rod trav.mm : 4.00 Speed 1/min: 1380...1410 4th speed 1/min: 1500 C-rod trav.mm : 0.00...1.00 LOWEST RATED SPEED I Control-lever position degrees: 8...16 Testing: 1/min : 200 Speed C-rod trav.mm min : 8.40 Speed 1/min: 275 C-rod trav.mm : 5.70...5.90 CONSTANT REGULATION 1/min : 275...360 Speed compensator (LDA,ADA,ALDA) 1st version Setting 1/min : 500 hPa : 700 Speed Pressure Contr.-rod trav.mm: 11.90...12.00 Measurement 1/min : 500 Speed 1st pressure hPa : -C-rod trav.mm : 10.70...10.80 2nd pressure hPa : 195 C-rod trav.mm : 11.60...11.70 3rd pressure hPa : 175 C-rod trav.mm : 11.10...11.30 SWITCH-OVER POINT 1/min: 195 (215) Speed FUEL-DELIVERY CHARACTERISTICS 1st version Charge press. hPa: 700 1/min : 750 Speed Del.quantity cm3/: 139.0...145.0 1000H.: (136.0...148.0) Charge press. hPa : -1/min : 500 Speed

L19

Del.quantity cm3/: 94.0...96.0 1000H.: (91.0...99.0)

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column : VMA 2,2 A1 Test sheet : 3.12.86 Edition : 5.84 replaces : ISO 4113 Calibrating oil Injection pump : VE 4/10F2100 L75-1: : 0 460 404 034 Type number Customer-specific information Customer : VM MOTORI : HR 492 HT Engine TEST BENCH REQUIREMENTS Calibrating-oil C return temp. with thermometer : 40...48 : 42...50 electronically Inlet press., bar: 0.2 Calibrating nozzle-holder : 1 688 901 000 assembly Opening bar: 147...150 pressure Test inj. tubing : 1 680 750 017 Outside diameter x Wall thickness : 2 mm: 840 x Length Injection-pump setting values Test specifications in parentheses Timing-device travel: 1/min: 1600 Charge press. hPa: 800 Setting value mm: 5,3...5,7 Supply-pump pressure: 1/min: 1600 Speed Charge press. hPa: 800 Setting value bar: 5,8...6,4

Full-load del. with charge press.:

Charge press. hPa: 800

1/min: 1600

Del.quantity cm3/ 1000H.: 47,5...48,5 Dispersion cm3/: 2,5 1000H: (3.0) Full-load del. w/out charge press.: Speed 1/min : 600 Del.quantity cm3/ 1000H.: 35,0...36,0 Low-idle speed regulation: 1/min: 400 Speed Charge press. hPa: -Del.quantity cm3/ 1000H.: 15,0...19,0 cm3/: 2.0 1000H.: (3.0) Dispersion Full-load speed regulation: 1/min: 2300 Speed Charge press. hPa: 800 Del.quantity cm3/ 1000H: 24,5...30,5 Start: 1/min: 100 Speed Del.quantity mind. cm3/1000H.: 50.0 Inspection-pump test specifications Test specifications in parentheses Timing-device characteristic: 1st speed 1/min: 1000 Charge press. hPa: 800 TD travel mm: 1,7...2,5 mm: (1,4...2,8) 1/min: 1600 2nd speed Charge press. hPa: 800 TD travel mm: mm: (4,8...6,2)3rd speed 1/min: 2100 Charge press. hPa: 800 mm: 7,8...8,6 mm: (7,5...8,9) TD travel Supply-pump pressure characteristic: 1/min: 400 1st speed Charge press. hPa: 800 Supply-pump pressure bar: 1,5...2,1 1/min: 2100 2nd speed Charge press. hPa: 800

Speed

```
Supply-pump
                 bar: 7,5...8,1
 pressure
Overflow quantity at overflow valve:
              1/min: 400
1st speed
Oveflow
                    : 55...138
            cm3/10s: (40...153)
 quantity
2nd speed
              1/min: 2100
Overflow
                    : 55...138
 quantity cm3/10s: (40...153)
Delivery-quant. and breakaway char.:
1st speed
              1/min: 700
Charge-air pressure-setting
 point
                 hPa: 300
             mm: 4,2
cm3/: 43,5...45,5
1000H.: (42,3...46,7)
LDA stroke
Del.quantity
              1/min: 2450
2nd speed
Charge press. hPa: 800
Del.quantity cms/: -
1000H.: 0...7.0
3rd speed
              1/min: 2300
Charge press. hPa: 800
Del.quantity cm3/: -
1000H.: (23,5...31,5)
              1/min: 2100
4th speed
Charge press. hPa: 800
Del.quantity cm3/: 41.5...44.5
1000H.: (40.8...45.2)
              1/min: 1600
5th speed
Charge press. hPa: -
Deliquentity cm3/: 31,5...34,5
1000H.: (30,8...35,2)
              1/min: 1600
6th speed
Charge press. hPa: 800
               cm3/: -
Del.guantity
             1000H.: (45,8...50,2)
7th speed
              1/min: 600
Charge press. hPa: -
Del.quantity cm3/: -
1000H.: (33,3...37,7)
Zero delivery (stop):
Mech. shutoff:
              1/min: 2100
Speed
Del.quantity
              cm3/: -
             1000H.
Idle delivery:
1st speed
              1/min: 400
Del.quantity cm3/: -
             1000H.: (13,0...1,0)
              1/min: 450
2nd speed
Del.quantity cm3/: -
1000H.: 0...2,0
3rd speed
              1/min: 650
```

```
Del.quantity cm3/: -
             1000H.: 0...2,0
Automatic starting fuel delivery:
1st speed
              1/min: 400
Del.quantity
              cm3/: -
              1000H: 45.0
 ind.
2nd speed
              1/min: 500
Del.quantity cm3/: -
              1000H: 37,0
Shutoff electromagnet:
Cut-in
                   : 10,0
min. voltage
Rated voltage
                   : 12.0
Mounting and assembly dimensions:
Designation
                     3,2...3,4
5,7...5,9
               mm
KF
               mm
                     0,7...0,9
MS
               mm
                   : 3,8
SVS max.
               mm
                     20,2...22,2
ΧK
              mm
                   : 10,3...13,6
XL
              mm
```

Remarks: Correction at adjusting nut (46) BOSCH-INJ.-PUMP TEST SPECIFICATIONS 1/min: 1500 Speed Charge press. hPa: 800 Del.quantity cm3/ 1000H.: 57,5...58,5 Dispersion cm3/: 3,0 1000H: (3,5) Note inst. in remarks column Test sheet : FIA 1,7 H1 Edition : 18.12.86 : 3.85 replaces : ISO 4113 Calibrating oil Full-load del. w/out charge press.: : VE 4/10F2050 R192: 1/min : 600 Injection pump Speed : G 460 404 040 Type number Del.quantity cm3/ 1000H.: 42,5...43,5 Customer-specific information Customer : FIAT Low-idle speed regulation: Engine : 8144.91.200 1/min: 400 Speed Charge press. hPa: -Del.quantity cm3/ 1000H.: 16.0...20.0 Dispersion cm3/: 3.0 1000H.: (3.5) TEST BENCH REQUIREMENTS Calibrating-oil oc return temp. with thermometer : 40...48 Full-load speed regulation: electronically : 42...50 1/min: 2250 Charge press. hPa: 800 Inlet press., bar: 0.2 Deliquantity cm3/ 1000H: 34,5...40,5 Calibrating nozzle-holder : 1 688 901 000 assembly Start: Opening bar : 147...150 1/min: 100 pressure Speed Deliquantity mind. cm3/1000H.: 54,0 Test inj. tubing : 1 680 750 017 Load-dependent start of delivery: Outside diameter : 6 x Wall thickness : 2 Speed 1/min: 1500 mm: 840 Charge press. hPa: x Length Start of delivery Inspection-pump test specifications mm: 0,2Test specifications in parentheses Prestroke (from BDC): +-0.02(0.04)Injection-pump setting values Timing-device characteristic: Test specifications in parentheses 1/min: 600 1st speed Charge press. hPa: 800 Timing-device travel: TD travel mm: 1,1...1,9 mm: (0,8...2,2)1/min: 1500 Speed Charge press. hPa: 800 Setting value mm: 5,3...5,7 1/min: 1500 2nd speed Charge press. hPa: 800 TD travel mm: mm: (4,8...6,2) Supply-pump pressure: 1/min: 2050 3rd speed Charge press. hPa: 800 Speed 1/min: 1500 mm: 7,6...8,4 mm: (7,3...8,7) Charge press. hPa: 800 TD travel Setting value bar: 6,1...6,7 Full-load del. with charge press.: Supply-pump pressure characteristic: L22

| | , | |
|--|-------------------|--|
| 1st speed 1/min: Charge press. hPa: | 400 800 | Zero delivery (stop): |
| Supply-pump | 1 | Mech. shutoff: |
| pressure bar: 2nd speed 1/min: | 3,44,U ! | Speed 1/min: 2050 |
| Charge press. hPa: | 800 | Del.quantity cm3/: - 1000H. |
| Supply-pump | I | |
| pressure bar: | 4,04,6 | Idle delivery: |
| 3rd speed 1/min: | 2050 | 1st speed 1/min: 400 |
| Charge press. hPa: Supply-pump | 1 I | Delouantity cm3/: - |
| pressure bar: | 7,48,0 | 1000H.: (13,522,5) 2nd speed 1/min: 500 |
| | 1 | 2nd speed 1/min: 500 |
| Overflow quantity at | . Over tow valve: | Del.quantity cm3/: 4.010.0 1000H.: (2.511.5) |
| 1st speed 1/min: | 600 | 1000H.: (2.511.5) 3rd speed 1/min: 600 |
| Charge press. hPa: | 800 | Del.quantity cm3/: - 1000H.: 05,0 |
| Oveflow: : quantity cm3/10s: | 720130 I | 4th speed 1/min: 1000 |
| 2nd speed 1/min: | 2050 | Del.quantity cm3/: - |
| Charge press. hPa: | 800 I | 1000H.: 03,0 |
| Overflow : | 55138 I | Autorialia atantina final delimento |
| quantity cm3/10s: | (40153) | Automatic starting fuel delivery: |
| Delivery-quant, and | | 1st speed 1/min: 450 |
| 1st speed 1/min: | | Del.quantity cm3/: - ind. 1000H: 47,0 |
| Charge-air pressure- point | Setting I | 1nd. 1000n: 47,0 |
| LDA stroke mm: | 4.5 | 2nd speed 1/min: 500 |
| Del.quantity cm3/: | 52,553,5 I | Del.quantity cm3/: - |
| I UUUH.: | (30,030,0) | ax. 1000H: 44,0 |
| 2nd speed 1/min: | | Chutoff alactromorate |
| Charge press. hPa: Del.quantity cm3/: | - | Shutoff electromagnet: |
| 1000H.: | 03 _. 0 | Cut-in |
| 3rd speed 1/min: | | min. voltage : 10,0 |
| Charge press. hPa: | 800 | Rated voltage : 12,0 |
| Del.quantity cm3/: | (1,09,0) | Mounting and assembly dimensions: |
| 4th speed 1/min: | | the motion of the cooling of the control of the con |
| Charge press. hPa: | | Designation |
| | (77 5 /1 5) | K mm : - KF mm : 5,76,0 |
| 5th speed 1/min: | (33,541,5) I | KF mm : 5,76,0 MS mm : 1,21,4 |
| Charge press. hPa: | | SVS max. mm : 2,2 |
| Deliquantity cm3/: | ا 5,51,5 | 0ر190ر18 mm |
| | (47,852,2) | XL mm : 11,414,8 |
| <pre>6th speed 1/min: Charge press. hPa:</pre> | | Remarks: |
| | - i | Correction at adjusting nut (46) |
| 1000H.: | (55,860,2) | |
| 7th speed 1/min: | | |
| Charge press. hPa: | 58 0 61 0 I | |
| Del.quantity cm3/: 1000H.: | (56,562,5) | |
| 8th speed 1/min: | 600 | |
| | - ! | |
| Deliquantity cm3/: 1000H: | (40,845,2) | |
| | | |
| 17/ | | |

Del.quantity cm3/ 1000H.: 58,7...59,7 Dispersion cm3/: 2,5 BOSCH-INJ.-PUMP TEST SPECIFICATIONS 1000H : (3,0) Note inst. in remarks column : VMA 2,2 D Test sheet Full-load del. w/out charge press.: Edition : 3.12.86 replaces : 1.85 Speed 1/min : 600 Deliquantity cm3/ Calibrating oil : ISO 4113 1000H.: 38.8...39.8 Injection pump : VE4/10F2100 L168-1: Type number : 0 460 404 042 Low-idle speed regulation: Customer-specific information Speed 1/min: 400 : MOTORI VM Customer Charge press. hPa: -Deliquantity cm3/ 1000H.: 13,0...17,0 Engine : HR 492 HJ cm3/: 2.0 1000H.: (3.0) Dispersion TEST BENCH REQUIREMENTS Full-load speed regulation: Calibrating-oil C return temp. 1/min: 2300 Speed with thermometer : 40...48 Charge press. hPa: 800 Deliquantity cm3/ electronically : 42...50 1000H: 27,0...33,0 Inlet press., bar : 0.2 Start: Calibrating nozzle-holder : 1 688 901 000 assembly Speed 1/min: 100 Del.quantity mind. cm3/1000H.: 50,0 Opening pressure bar: 147...150 Load-dependent start of delivery: Test inj. tubing : 1 680 750 017 1/min: 1500 Speed Charge press. hPa: -Outside diameter : 6 x Wall thickness : 2 Inspection-pump test specifications mm: 840 Test specifications in parentheses x Length Injection-pump setting values Test specifications in parentheses Timing-device characteristic: Timing-device travel: 1/min: 1000 1st speed Charge press. hPa: 800 mm: 1,6...2,4 mm: (1,3...2,7) 1/min: 1500 7D travel Speed 1/min: 1500 Charge press. hPa: 800 Setting value mm: 4,6...5,0 2nd speed Charge press. hPa: 800 TD travel Supply-pump pressure: mm: · mm: (4,1...5,5)1/min: 2100 3rd speed 1/min: 1500 The travel mm: 7,6...8,4 mm: (7,3...8,7) Speed Charge press. hPa: 800 Setting value bar: 4,8...5,4 Full-load del. with sharge press.: Supply-pump pressure characteristic: 1/min: 3500 Speed Charge press. hPa: 800 1st speed 1/min: 400 Charge press. hPa: 800

L24

Del.quantity cm3/: 2,5...8,5 1000H.: (1,0...10,0) Supply-pump bar: 1,1...1,7 pressure 1/min: 2100 1/min: 600 2nd speed 3rd speed hfa: 800 Del.quantity cm3/: -Charge press. Supply-pump 1000H.: 0...2,0 bar: 6,9...7,5 pressure Automatic starting fuel delivery: Overflow quantity at overflow valve: 1/min: 400 1st speed Del.quantity cm3/: 43,0...63,0 1st speed 1/min: 2100 1000H: -Charge press. hPa: ind. : 55...138 Oveflow quantity cm3/10s: (40...153) 2nd speed 1/min: 500 Del.quantity cm3/: Delivery-quant. and breakaway char.: 1000H: 55,0 1st speed 1/min: 700 Charge-air pressure-setting Shutoff electromagnet: point hPa: 400 LDA stroke mm: 6.1 Del.quantity cm3/: 50.3...51.3 1000H.: (48.1...53.5) Cut-in min. voltage Rated voltage 2nd speed 1/min: 2450 Charge press. hPa: 800 Del.quantity cm3/: 1.5...8.5 1000H.: (0.5...9.5) 3rd speed 1/min: 2300 Designation mm KF Charge press. hPa: 800 mm Del.quantity cm3/: -1000H.: (25,5...34,5) MS mm XK mm 4th speed XL 1/min: 2100 mm Charge press. hPa: 800 Del.quantity cm3/: 49,5...52,5 1000H.: (46,5...55,5) 5th speed 1/min: 1500 Remarks: Charge press. hPa: 800 Deliquantity cm3/: -1000H.: (56,5...61,9) 1/min: 600 6th speed Charge press. hPa: -Del.quantity cm3/: -1000H.: (36,6...42,0) 7th speed 1/min: 600 Charge press. hPa: 800 Del.quantity cm3/: 61,2...64,2 1000H.: (59,3...66,1) Zero delivery (stop): Mech. shutoff: 1/min: 2050 Speed Del.quantity cm3/ 1000H. cm3/: -Idle delivery: 1st speed 1/min: 400 Deliquantity cm3/: -1000H.: (10,5..19,5) 2nd speed 1/min: 450

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VMA 2,2 A2 Edition : 29 9 86 Edition replaces : 29.9.86

Calibrating oil : ISO-4113

Injection pump : VE 4/10F2100 L75-2 Type number : 0 460 404 044

Customer-specific information Customer : VM MOTORI

: HR 492 HT Engine

TEST BENCH REQUIREMENTS

Calibrating-oil return temp. °C

with thermometer : 40...48 electronically : 42...50

Inlet press., bar : 0.2

Calibrating nozzle-holder

assembly : 1 688 901 000

Opening

pressure bar : 147...150

Test inj. tubing : 1 680 750 017

Outside diameter : 6 x Wall thickness : 2 mm: 840 x Length

Injection-pump setting values Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1600 Charge press. hPa: 1000 Setting value mm: 5,3...5,7

Supply-pump pressure:

Speed 1/min: 1600 Charge press. hPa: 1000 Setting value bar: 5,8...6,4

Full-load del. with charge press.:

Speed 1/min: 700 Charge press. hPa: 1000 Del.quantity cm3/ 1000H.: 48,5...50,5 Overflow quantity at overflow valve: 1/min: 400 1st speed Full-load del. w/out charge press.: Charge press. hPa: : 55...138 Oveflow quantity cm3/10s: (45...153) Speed 1/min : 600 2nd speed 1/min: 2100 Del.quantity cm3/ Charge press. hPa: Overflow: 5 1000H.: 40,0...41,0 : 55...138 quantity cm3/10s: (45...153) Low-idle speed regulation: Delivery-quant. and breakaway char.: Speed 1/min: 400 1st speed 1/min: 1600 Charge press. hPa: -Del.quantity cm3/ 1000H.: 15,0...19,0 Charge-air pressure-setting hPa: 500 point LDA stroke mm: 4,2 Del.quantity cm3/: 53,0...54,0 1000H.: (50,8...56,2) cm3/: 3,0 Dispersion 1000H.: -Full-load speed regulation: 1/min: 2500 2nd speed Charge press. hPa: 1000
Del.quantity cm3/: 1000H.: 0...5,0
3rd speed 1/min: 2400 1/min: 2400 Speed Charge press. hPa: 1000 Del.quantity cm3/ 1000H: 17,0...23,0 Charge press. hPa: 1000
Del.quantity cm3/: 17.0...23.0
1000H.: (15.5...24.5) Start: 1/min: 2100 Speed 1/min: 100 4th speed Charge press. hPa: 1000 Del.quantity mind. The press of the p cm3/1000H.: 50,0 Inspection-pump test specifications Test specifications in parentheses Timing-device characteristic: Charge press. hPa: 1000
Del.quantity cm3/: 48.5...50.5
1000H.: (46.8...52.2)
7th speed 1/min: 600 1st speed 1/min: 1000 Charge press. hPa: 1000 mm: 1.7...2.5 mm: (1.4...2.8) TD travel 7th speed Charge press. hPa: Del.quantity cm3/: 40,0...41,0 1000H.: (37,8...43,2) 2nd speed 1/min: 1600 Charge press. hPa: 1000 TD travel mm: mm: (4,8...6,2) 1/min: 2100 Zero delivery (stop): 3rd speed Charge press. hPa: 1000 Mech. shutoff: mm: 7.8...8.6 mm: (7,5...8,9) TD travel Speed 1/min: -Del.quantity cm3/: - 1000H. Supply-pump pressure characteristic: Electr. shutoff: 1/min: 2100 Speed 1/min: 400 1st speed Charge press. hPa: 1000 ELAB volt: -Del.quantity cm3/: - 1000H. Supply-pump bar: 1,5...2,1 pressure 1/min: 2100 2nd speed Charge press. hPa: 1000 Idle delivery: Supply-pump bar: 7,5...8,1 1st speed 1/min: 400 pressure

```
Del.quantity cm3/: -
1000H.: (12,5..21,5)
2nd speed
                1/min: 450
Del.quantity cm3/: -
              1000H .: 0...2,0
3rd speed
3rd Specu
Del.quantity cm3/: -
1000H.: 0...2,0
                1/min: 650
Automatic starting fuel delivery:
1st speed
               1/min: 400
Del.quantity cm3/: -
                1000H: 45,0
 ind.
2nd speed
               1/min: 500
Del.quantity cm3/: -
                1000H: 45,0
Shutoff electromagnet:
Cut-in
                     : 10,0
: 12,0
min. voltage
Rated voltage
Mounting and assembly dimensions:
Designation
                      : 3,3
: 5,7-5,9
                 mm
KF
                 mm
                    : 0,7-0,9
: 3,8
: 20,2-22,2
: 10,3-13,6
MS
                 mm
SVS max.
                 min
XK
                mm
XL
                mm
Remarks:
Correction at adjusting nut (46)
```

Low-idle speed regulation: BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column 1/min: 420 Speed Del.quantity cm3/ 1000H.: 16,0...20,0 : VOL 3.1 D : 3.12.86 Test sheet cm3/: 3,0 Edition Dispersion 1000Ha: replaces Calibrating oil : ISO 4113 Full-load speed regulation: : VE 4/10F1750 L250 1/min: 1900 Injection pump Speed : 0 460 404 047 Del.quantity cm3/ Type number 1000H: 31,0...37,0 Customer-specific information : VOLVO PENTA Customer Start: Éngine : MD 31 Speed 1/min: 100 Del.quantity mind. TEST BENCH REQUIREMENTS cm3/1000H.: 90.0 Calibrating-oil return temp. °C Inspection-pump test specifications Test specifications in parentheses with thermometer: 40...48 : 42...50 electronically Timing-device characteristic: Inlet press., bar: 0.2 1/min: 800 1st speed Calibrating nozzle-holder TD travel mm: 1,5...2,1 mm: (1,1...2,5) 1/min: 1000 : 1 688 901 022 assembly 2nd speed Opening TD travel mm: mm: (2,3...3,7) 1/min: 1750 pressure bar : 130...133 3rd speed mm: 6,1...6,9 mm: (5,8...7,2) TD travel Test inj. tubing : 1 680 750 073 Supply-pump pressure characteristic: Outside diameter : 6 x Wall thickness : 2 mm:4501/min: 400 x Length 1st speed Supply-pump bar: 3,5...4,1 Injection-pump setting values pressure 1/min: 800 Test specifications in parentheses 2nd speed Supply-pump bar: 5,2...5,8 1/min: 1750 Timing-device travel: pressure 3rd speed 1/min: 1000 Supply-pump Setting value mm: 2,8...3,2 bar: 8,2...8,8 pressure Overflow quantity at overflow valve: Supply-pump pressure: 1/min: 1000 1st speed 1/min: 600 Speed Oveflow : 41...83 4...6,5 Setting value bar: 5 cm3/10s: (26...98) 1/min: 1750 quantity Full-load del. w/out charge press.: 2nd speed Over flow : 55...138 quantity cm3/10s: (40...153) 1/min : 1000 Speed Del.quantity cm3/ 1000H.: 53.0...54.0 cm3/: 3.0 Delivery-quant. and breakaway char.: 1st speed 1/min: 2130 Dispersion 1000H.: -M01

```
Del.quantity cm3/: -
1000H.: 0...2,5
3rd speed
               1/min: 2000
Del.quantity cm3/: 8.5...16.5
1000H.: (8.0...17.0)
               1/min: 1900
4th speed
Del.quantity cm3/: -
1000H.: (29,5...38,5)
5th speed
               1/min: 1750
Del.quantity cm3/: 62.0...65.0
1000H.: (60.8...66.2)
               1/min: 1400
6th speed
Dec.quantity cm3/: 60,0...63,0
1000H.: (58,8...64,2)
               1/min: 1000
7th speed
Del.quantity cms/: -
1000H.: (50,8...56,2)
               1/min: 600
8th speed
Del.quantity cm3/: 45,5...48,5
1000H: (43,6...50,4)
Zero delivery (stop):
Mech. shutoff:
               1/min: -
Speed
Del.quantity cm3/: - 1000H.
Electr. shutoff:
               1/min: 1750
Speed
ELAB
                 volt: -
              1000H.
Idle delivery:
               1/min: 420
1st speed
Del.quantity cm3/: -
1000H.: (13,5..22,5)
               1/min: 480
2nd speed
Del.quantity cms/: 1,0...8,5)
                cm3/: 1,0....7,0
3rd speed
               1/min: 550
Del.quantity cm3/: -
1000H.: 0...2,5
Automatic starting fuel delivery:
               1/min: 300
1st speed
Del.quantity
               cm3/: -
               1000H: 60,0
 ind.
               1/min: 500
2nd speed
Del.quantity
                cm3/: -
               1000H: 54,0
 ax.
Shutoff electromagnet:
Cut-in
 min. voltage
                     : 10,0
Rated voltage
                     : 12,0
```

MÔŽ

Mounting and assembly dimensions:

Designation

K mm : 3,2...3,4
KF mm : 5,1...5,4
MS mm : 0,7..0,95
SVS max. mm : 3,0
xK mm : 18,8...20.

XK mm : 18,8...20,8 XL mm : 10,5...13,9

Pushing electromagnet.

Del.quantity cm3/ 1000H.: 58,5...59,5 BOSCH-INJ.-PUMP TEST SPECIFICATIONS Dispersion cm3/:3.0Note inst. in remarks column 1000H : -: OPE 2,3 K2 Test sheet Full-load del. w/out charge press.: Edition : 15.10.86 replaces 1/min : 500 Speed Del.quantity cm3/ 1000H.: 36,0...37,0 : ISO-4113 Calibrating oil : VE 4/10F2100 L156-1 Injection pump Low-idle speed regulation: Type number : 0,460,404,048 Customer-specific information 1/min: 290 Customer : OPEL REKORD AUTOM. Del.quantity cm3/ 1000H.: 13,5...17,5 Engine : 2,3 TD Dispersion cm3/: 3,0 1000H.: TEST BENCH REQUIREMENTS Full-load speed regulation: Calibrating-oil Speed 1/min: 2300 return temp. Charge press. hPa: 800 with thermometer : 40...48 Deliquantity cm3/ : 42...50 1000H: 28,5...35,5 electronically Inlet press., bar: 0.2 Start: Calibrating nozzle-holder 1/min: 100 Speed Del.quantity mind. assembly : 1 688 901 000 cm3/1000H.: 48,0 Opening bar: 147...150 Load-dependent start of delivery: pressure Speed 1/min: 1500 Test inj. tubing : 1 680 750 017 Charge press. hPa: -Outside diameter : 6 Inspection-pump test specifications Test specifications in parentheses x Wall thickness : 2 mm: 840 x Length Timing-device characteristic: Injection-pump setting values Test specifications in parentheses 1/min: 800 1st speed Charge press. hPa: 800 Timing-device travel: mm: 1.5...2.3 mm: (1,2...2,6) TD travel Speed 1/min: 1200 Charge press. hPa: 800 1/min: 1200 2nd speed Setting value mm: 3,4...4,0 Charge press. hPa: 800 TD travel inm: Տախըլy-ըստը pressure: mm: (3,0...4,4)1/min: 1500 3rd speed 1/min: 1200 Charge press. hPa: 800 Speed Charge press. hPa: 800 mm: 5,1...5,5 TD travel mm: (4,6...6,0) 1/min: 2100 Setting value bar: 4,4...5,0 4th speed Charge press. hPa: 800 Full-load del. with charge press.: mm: 7,9...8,7 mm: (7,6...9,0) TD travel 1/min: 1200 Speed Charge press. hPa: 800 Supply-pump pressure characteristic:

```
1/min: -
                                                          Speed
               1/min: 500
                                                          Del.quantity cm3/: -
1st speed
Charge press. hPa: 800
                                                                         1000H.
Supply-pump
                bar: 2,7...3,3
1/min: 1500
 pressure
                                                          Electr. shutoff:
                                                          Speed
                                                                          1/min: 2100
2nd speed
Charge press. hPa: 800
                                                          ELAB
                                                                           volt: -
Supply-pump
                                                                         1000H.
                  bar: 5,0...5,6
 pressure
                1/min: 2100
3rd speed
                                                          Idle delivery:
                 hPa: 800
Charge press.
Supply-pump
                                                          1st speed
                                                                          1/min: 290
                                                          Del.quantity cm3/: -
1000H.: (11,0..20,0)
2nd speed 1/min: 320
Del.quantity cm3/: 7,0...13,0
1000H.: (5,5...14,5)
3rd speed 1/min: 380
                  bar: 6.4...7.0
 pressure
Overflow quantity at overflow valve:
1st speed
               1/min: 500
Charge press. hPa: -
                                                          Del.quantity cm3/: -
1000H.: 0...2,5
Oveflow
                      : 41...83
quantity cm3/10s: (26...98)
2nd speed 1/min: 2100
Charge press. hPa: 800
                                                          Automatic starting fuel delivery:
Over flow
                     : 55...138
 quantity cm3/10s: (40...153)
                                                                          1/min: 250
                                                          1st speed
                                                          Del.quantity cm3/:
                                                                          1000H: 50,0
Delivery-quant. and breakaway char.:
                                                            ind.
1st speed
              1/min: 800
Charge-air pressure-setting
                                                                          1/min: 400
                                                          2nd speed
                  hPa: 300
                                                                         cm3/: -
 point
                                                          Del.quantity
LDA stroke mm: 6,2
Del.quantity cm3/: 43,5...44,5
1000H.: (40,6...47,4)
                                                                          1000H: 47.0
                                                            ax.
                                                          Shutoff electromagnet:
                1/min: 2550
2nd speed
Charge press. hPa: 800
                                                          Cut-in
Del.quantity cm3/:
                                                           min. voltage
                                                                                : 10,0
              1000H.: 0...6,0
                                                          Rated voltage
                                                                                : 12,0
               1/min: 2425
3rd speed
Charge press. hPa: 800
Del.quantity cm3/: 15,0...21,0
1000H.: (13,5...22,5)
4th speed 1/min: 2300
                                                          Mounting and assembly dimensions:
                                                          Designation
                                                                               : 3,2...3,4
: 5,7...6,0
                                                          K
                                                                           mm
                                                          KF
Charge press. hPa: 800
                                                                           mm
Del.quantity cm3/: -
1000H.: (27,5...36,5)
                                                                               : 0,9..1,15
                                                          MS
                                                                           mm
                                                          SVS max.
                                                                               : 4,4
                                                                           mm
                                                                               : 18,7...20,7
               1/min: 2100
5th speed
                                                          XK
                                                                           mm
                                                                                : 9.4...12.8
                                                          XL
Charge press. hPa: 800
                                                                           mm
Del.quantity cm3/: 46,3...48,7
1000H.: (44,9...50,1)
                                                          Remarks:
               1/min: 1200
6th speed
Charge press. hPa: 800
Del.quantity cm3/:
              1000H.: (56,4...61,6)
               1/min: 500
7th speed
Charge press. hPa: -
Del.quantity cm3/: -
              1GOOH.: (33,1...39,9)
Zero delivery (stop):
Mech. shutoff:
```

M₀4

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VWW 2,4A Edition : 2.12.86 replaces : 5.84 Calibrating oil : ISO 4113

Injection pump : VE 6/10F2400 L116 Type number : 0 460 406 018

•

Customer-specific information

Customer : VWW

Engine : 087-T

TEST BENCH REQUIREMENTS

Calibrating-oil return temp. °C

with thermometer : 40...48 electronically : 42...50

Inlet press., bar: 0.2

Calibrating nozzle-holder

assembly : 1 688 901 000

Opening

pressure bar : 147...150

Test inj. tubing : 1 680 750 017

Outside diameter : 6 x Wall thickness : 2 x Length mm : 840

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1500 Charge press. hPa: 750 Setting value mm: 1,4...1,8

Supply-pump pressure:

Speed 1/min: 1500 Charge press. hPa: 750 Setting value bar: 5,7...6,3

Full-load del. with charge press.:

Speed 1/min: 1500 Charge press. hPa: 750

```
Del.quantity cm3/
               1000H: 43.0...44.0
cm3/: 2.5
                                                              Overflow quantity at overflow valve:
Dispersion
               1000H : (3,0)
                                                              1st speed
                                                                              1/min: 600
                                                              Charge press. hPa:
                                                              Oveflow
                                                                                    : 55...138
Full-load del. w/out charge press.:
                                                               quantity cm3/10s: (40...153) nd speed 1/min: 2400
Speed
                                                              2nd speed
               1/min : 600
                                                              Charge press. hPa: 750
Del.quantity cm3/
               1000H.: 26,5...27,5
                                                              Overflow
                                                                                    : 55...138
                                                               quantity cm3/10s: (40...153)
Low-idle speed regulation:
                                                              Delivery-quant. and breakaway char.:
                1/min: 415
                                                              1st speed
                                                                             1/min: 800
Speed
Del.quantity cm3/
                                                              Charge-air pressure-setting
               1000H.: 6,0...10,0
                                                                                hPa: 300
                                                               point
                                                             LDA stroke mm: 4,2
Del.quantity cm3/: 33,5...34,5
1000H.: (31,0...37,0)
               cm3/: 2,0
1000H.: (3,0)
Dispersion
Full-load speed regulation:
                                                                              1/min: 2825
                                                              2nd speed
                                                             Charge press. hPa: 750
Del.quantity cm3/: -
1000H.: 0...6,0
3rd speed 1/min: 2675
Speed
                1/min: 2675
Charge press. hPa: 750
Del.quantity cm3/
                1000H: 10,0...16,0
                                                              Charge press. hPa: 750
                                                             Charge press. nPa: 750
Del.quantity cm3/: -
1000H.: (9,0...17,0)
4th speed 1/min: 2400
Charge press. hPa: 750
Del.quantity cm3/: 35,6...37,6
1000H.: (34,3...38,9)
5th speed 1/min: 1500
Charge press. hPa: 750
Start:
Speed
                1/min: 100
Del.quantity mind.
          cm3/1000H.: 42,0
Inspection-pump test specifications
                                                              Charge press. hPa: 750
Test specifications in parentheses
                                                             Del.quantity cm3/: -
1000H.: (41,2...45,8)
                                                                              1/min: 600
Timing-device characteristic:
                                                              6th speed
                                                             Charge press. hPa: -
Del.quantity cm3/: -
1000H.: (24,0...30,0)
1st speed 1/min: 1200
Charge press. hPa: 750
                    mm: 0,2...1,0
mm: (0...1,3)
TD travel
                                                             Zero delivery (stop):
2nd speed
                1/min: 1500
Charge press. hPa: 750
                                                             Mech. shutoff:
TD travel
                    mm:
                                                              Speed
                                                                              1/min: -
                                                             Del.quantity cm3/: - 1000H.
                    mm: (0,9...2,3)
                1/min: 2400
3rd speed
                  hPa: 750
Charge press.
                    mm: 4,1...4,9
mm: (3,8...5,2)
TD travel
                                                             Electr. shutoff:
                                                              Speed
                                                                              1/min: 400
                                                                               volt: -
                                                             Del.quantity cm3/: - 1000H.
Supply-pump pressure characteristic:
                1/min: 600
1st speed
Charge press. hPa: 750
                                                             Idle delivery:
Supp Ty-pump
                bar: 3,3...3,9
1/min: 2400
                                                                              1/min: 415
                                                             ist speed
 pressure
                                                             Del.quantity
2nd speed
                                                                              cm3/: -
                                                                             1000H.: (4,0...12,0)
                  hPa: 750
Charge press.
                                                                              1/min: 750
Supply-pump
                                                             2nd speed
                  bar: 7,8...8,4
 pressure
```

```
Del.quantity cm3/: -
1000H.: 0...3,0
Automatic starting fuel delivery:
1st speed
                1/min: 400
Del.quantity cm3/: -
ind. 1000H: 20,0
                1/min: 500
2nd speed
Del.quantity cm3/: -
ax. 1000H: 30,0
Shutoff electromagnet:
Cut-in
                      : 10,0
min. voltage
Rated voltage
Mounting and assembly dimensions:
Designation
                     : 3,2...3,4
: 6,3...6,6
: 1,7...1,9
KF
                 mm
MS
                 min
                 mm : 2,4
mm : 21,8...23,8
mm : 9,4...12,7
SVS max.
XK
XL
Remarks:
Correction at adjusting nut (46)
```

```
BOSCH-INJ.-PUMP TEST SPECIFICATIONS
                                                                   1/min: 150°
                                                     Speed
                                                     Charge press. hPa: 1050
Del.quantity cm3/
1000H.: 40,0...41,0
Note inst. in remarks column
Test sheet
                    : BMW 2,4 A
                                                     KSB solenoid-operated
                    : 19.12.86
Edition
                                                                   volt : ~
                                                      valve
                    : 4.86
                                                                   cm3/:3,0
replaces
                                                     Dispersion
                                                                   1000H : -
                    : ISO 4113
Calibrating oil
                    : VE 6/10F2400 R121
Injection pump
                                                     Full-load del. w/out charge press.:
                    : 0 460 406 022
Type number
                                                                  1/min : 500
                                                     Speed
                                                     Del.quantity cm3/
1000H.: 27,5...28,5
Customer-specific information
Customer
                    : BMW
                                                     KSB solenoid-operated
                    : M21D24
Engine
                                                      valve
                                                                    volt: -
                                                                    cm3/: 3,0
                                                     Dispersion
TEST BENCH REQUIREMENTS
                                                                  1000H .: -
Calibrating-oil C
                                                     Low-idle speed regulation:
return temp.
with thermometer : 40...48
                                                     Speed
                                                                   1/min: 400
                                                     Charge press. hPa: -
Del.quantity cm3/
1000H.; 6,0...10,0
                   : 42...50
electronically
Inlet press., bar : 0.2
                                                     KSB solenoid-operated
                                                      valve
Calibrating nozzle-holder
                                                                    volt: -
                   : 1 688 901 022
 assembly
                                                     Full-load speed regulation:
Opening.
                                                                   1/min: 2600
                                                     Charge press. hPa: 1050
               bar: 130...133
 pressure
                                                     Del.quantity cm3/
1000H: 17,0...23,0
Test inj. tubing : 1 680 750 073
                                                     KSB solenoid-operated
                                                      valve
                                                                    volt: -
                                                                    cm3/: 5,0
Outside diameter : 6
                                                     Dispersion
x Wall thickness : 2
                                                                  1000Ha: -
                mm: 450
x Length
                                                     Start:
Injection-pump setting values
Test specifications in parentheses
                                                     Speed
                                                                   1/min: 250
                                                     Del.quantity mind.
                                                              cm3/1000H.: 36.0
Timing-device travel:
                                                     KSB solenoid-operated
                                                      valve
                                                                    volt: -
Speed
              1/min: 1500
Charge press. hPa: 1050
Setting value mm: 4,1...4,5
                                                     Inspection-pump test specifications
KSB solenoid-operated
                                                     Test specifications in parentheses
 valve
               volt: -
Supply-pump pressure:
                                                     Timing-device characteristic:
                                                                   1/min: 500
              1/min: 1500
                                                     1st speed
Speed
Charge press. hPa: 1050
Setting value bar: 6,1...6,5
                                                     Charge press. hPa: 1050
                                                                      mm: 1,9...2,9
mm: (1,7...3,1)
                                                     TD travel
KSB solenoid-operated
 valve
               volt: -
                                                     KSB solenoid-operated
                                                                   volt: 12,0
                                                      valve
                                                                   1/min: 1000
Full-load del. with charge press.:
                                                     2nd speed
80M
```

| Charge press. hPa: 1050 | KSB solenoid-operated |
|--|-----------------------------|
| TD travel mm: 3,74,7 | valve volt: - |
| mm: (3,54,9) | Del.quantity cm3/: 33,534,5 |
| Von anianaid-ananatad | 10004 (21 7 76 7) |
| K3B solenoid-operated | 1000H.: (31,736,3) |
| valve volt: 12,0 | 2nd speed 1/min: 2700 |
| 3rd speed 1/min: 750 | Charge press. hPa: 1050 |
| Charge press. hPa: 1050 | KSB solenoid-operated |
| TD travel mm: 1,32,1 | valve volt: - |
| mm: (1,02,4) | Del.quantity cm3/: 7,013,0 |
| KSB solenoid-operated | 1000H.: (6,014,0) |
| | 7-4 4/vin : 2600 |
| valve volt: - | 3rd speed 1/min: 2600 |
| 4th speed 1/min: 1500 | Charge press. hPa: 1050 |
| Charge press. hPa: 1050 | KSB solenoid-operated |
| TD travel mm: - | valve volt: - |
| mm: $(3,65,0)$ | Del.quantity cm3/: - |
| KSB solenoid-operated | 1000H.: (16,024,0) |
| volve volte - | /th coord 1/min 2/00 |
| valve volt: - | 4th speed 1/min: 2400 |
| 5th speed 1/min: 2300 | Charge press. hPa: 1050 |
| Charge press. hPa: 1050 | KSB solenoid-operated |
| TD travel mm: 7.48.2 | valve volt: - |
| mm: (7,18,5) | Del.quantity cm3/: 40,542,5 |
| VCB caleboid-operated | 1000H.: (39,243,8) |
| KSB solenoid-operated | |
| valve volt: - | 5th speed 1/min: 1500 |
| l | Charge press. hPa: 1050 |
| Supply-pump pressure characteristic: | KSB solenoid-operated |
| | valve volt: - |
| 1st speed 1/min: 500 | Del.quantity cm3/: - |
| Change aroon block 1050 | 10004 (70.2 /2.8) |
| Charge press. hPa: 1050 | 1000H.: (38,242,8) |
| Supp (y-pump | 6th speed 1/min: 750 |
| pressure bar: 3,23,6 | Charge press. hPa: 1050 |
| KSB solenoid-operated | KSB solenoid-operated |
| valve volt: - | valve volt: - |
| 2nd speed 1/min: 2300 | |
| Change and him. 2000 | Del.quantity cm3/: 33,534,5 |
| Charge press. hPa: 1050 | 1000H.: (31,736,3) |
| Supp[y-pump | 7th speed 1/min: 500 |
| pressure bar: 8,18,5 | Charge press. hPa: 1050 |
| KSB solenoid-operated | KSB solenoid-operated |
| valve volt: - | valve volt: - |
| i | Del.quantity cm3/: - |
| According a contitue of according values | 10004 (25 7 70 7) |
| Overflow quantity at overflow valve: | 1000H.: (25,730,3) |
| | |
| 1st speed 1/min: 500 | Zero delivery (stop): |
| Charge press. hPa: 1050 | • |
| KSB solenoid-operated | Mech. shutoff: |
| valve volt: - | |
| | |
| Oveflow : 4183 | Del.quantity cm3/: - |
| quantity cm3/10s: (2698) | 1000H. |
| 2nd speed 1/min: 2400 | |
| Charge press. hPa: 1050 | Idle delivery: |
| KSB solenoid-operated | |
| | 1st speed 1/mins /00 |
| valve volt: - | 1st speed 1/min: 400 |
| Overflow : 55138 | KSB solenoid-operated |
| quantity cm3/10s: (40153) | valve volt: - |
| | Del.quantity cm3/: - |
| Delivery-quant. and breakaway char.: | 1000H.: (4,012,0) |
| | 2nd speed 1/min: 475 |
| | |
| Charge-air pressure-setting | KSB solenoid-operated |
| point hPa: 250 | valve volt: - |
| LDA stroke mm: 4,3 | Del.quantity cm3/: - |
| | 1000H.: 03,0 |
| | |
| | |

```
Automatic starting fuel delivery:
1st speed
              1/min: 100
KSB solenoid-operated
               volt: -
 valve
Del.quantity cm3/: 27,0...37,0
              1000H: -
 ind.
2nd speed
              1/min: 400
KSB solenoid-operated
valve volt: -
Del.quantity cm3/: 32,0...42,0
ax.
              1000H: -
3rd speed
              1/min: 480
KSB solenoid-operated
 valve
               volt: -
Del.quantity
               cm3/: 25,2...29,8
              1000H: -
Shutoff electromagnet:
Cut-in
min. voltage
                  : 10,0
Rated voltage
                  : 12,0
Mounting and assembly dimensions:
Designation
                  : 3,2...3,4
: 6,3...6,6
: 1,5...1,7
: 4,0
               mm
KF
               mm
MS
               mm
SVS max.
               mm
               mm : 20,2...22,2
mm : 9,5...12,8
XK
XL
Remarks:
Correction at adjusting nut (46)
```

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test sheet : VWW 2,4 L : 19.12.86 Edition replaces : 6.84 : ISO 4113 Calibrating oil : VE 6/10F2400 L144 Injection pump : 0 460 406 029 Type number Customer-specific information Customer Engine : 087T TEST BENCH REQUIREMENTS Calibrating-oil C return temp. with thermometer : 40...48 : 42...50 electronically Inlet press., bar: 0.2 Calibrating nozzle-holder assembly : 1 688 901 000 Opening bar: 147...150 pressure Test inj. tubing : 1 680 750 017 Outside diameter : 6 x Wall thickness : 2 mm: 840 x Length Injection-pump setting values Test specifications in parentheses Timing-device travel: Speed 1/min: 1500 Charge press. hPa: 750 mm: 0,8...1,2 Setting value KSB solenoid-operated volt: 12,0 valve Supply-pump pressure: Speed 1/min: 1500 Charge press. hPa: 750 Setting value bar: 5,7...6,3 KSB solenoid-operated valve volt: 12,0

Full-load del. with charge press.:

1/min: 1500 Speed Charge press. hPa: 750 Del.quantity cm3/ 1000H.: 44,0...45,0 KSB solenoid-operated volt: 12,0 valve cm3/: 2,5 1000H: (3,0) Dispersion Full-load del. w/out charge press.: 1/min : 600 Speed Del.quantity cm3/ 1000H.: 25,5...26,5 KSB solenoid-operated valve volt: 12,0 Low-idle speed regulation: 1/min: 415 Speed Charge press. hPa: -Del.quantity cm3/ 1000H.: 6,0...10,0 KSB solenoid-operated volt: 12.0 cm3/: 2.0 1000H.: (3.0) valve Dispersion Full-load speed regulation: 1/min: 2675 Charge press. hPa: 750 Deliquantity cm3/ 1000H: 10,0...16,0 KSB solenoid-operated volt: 12.0 valve Start: 1/min: 100 Speed Del.quantity mind. cm3/1000H.: 40,0 KSB solenoid-operated volt: 12,0 valve Inspection-pump test specifications Test specifications in parentheses Timing-device characteristic: 1/min: 1500 1st speed Charge press. hPa: 750 TD travel mm: mm: (0,3...1,7)KSB solenoid-operated volt: 12,0 valve 1/min: 1500 2nd speed Charge press. hPa: 750

| TD thought and 7.0 / 0 | 1at aread 1/min. 900 |
|--------------------------------------|---|
| TD travel mm: 3,04,0 | 1st speed 1/min: 800 |
| mm: (2,84,2) | Charge-air pressure-setting |
| KSB solenoid-operated | point hPa: 300 |
| valve volt: 12.0 | LDA stroke mm: 5,3 |
| 3rd speed 1/min: 2000 | KSB solenoid-operated |
| Charge press. hPa: 750 | valve volt: 12,0 |
| TD travel mm: 3,13,9 | Del.quantity cm3/: 32,533,5 |
| mm: (2,84,2) | 1000H.: (30,036,0) |
| KSB solenoid-operated | 2nd speed 1/min: 2825 |
| valve volt: 12,0 | Charge press. hPa: 750 |
| 4th speed 1/min: 2000 | KSB solenoid-operated |
| Charge press. hPa: 750 | valve volt: 12,0 |
| TD travel mm: 5,87,0 | Del.quantity cm3/: - |
| mm: (5,7,7,1) | 1000H.: 06.0 |
| KSB solenoid-operated I | 3rd speed 1/min: 2675 |
| valve volt: - | Charge press. hPa: 750 |
| 5th speed 1/min: 2400 | KSB solenoid-operated |
| Charge press. hPa: 750 | valve volt: 12,0 |
| TD travel mm: 5,05,8 | Del.quantity cm3/: - 1 |
| mm: (4,76,1) | 1000H.: (9,017,0) |
| KSB solenoid-operated | 4th speed 1/min: 2400 |
| valve volt: 12,0 | Charge press. hPa: 750 |
| | KSB solenoid-operated |
| Supply-pump pressure characteristic: | valve volt: 12,0 |
| Antonia de Africa (OO | Del.quantity cm3/: 35,037,0 1000H.: (33,738,3) |
| 1st speed | 100011: (55,758,5) |
| Charge press. hPa: 750 | Sth speed 1/min: 1500 |
| Supply-pump ! | Charge press. hPa: 750 |
| pressure bar: 3,33,9 | KSB solenoid-operated |
| KSB solenoid-operated ! | valve volt: 12,0 |
| valve volt: 12,0 | Del.quantity cm3/: - |
| 2nd speed 1/min: 1500 | 1000H.: (42,246,8) |
| Charge press. hPa: 750 | 6th speed 1/min: 600 |
| Supply-pump ! | Charge press. hPa: - |
| pressure bar: 6,87,4 | KSB solenoid-operated |
| KSB solenoid-operated I | valve volt: 12,0 |
| valve volt: - | Del.quantity cm3/: - |
| 3rd speed 1/min: 2400 | 1000H.: (23,029,0) |
| Charge press. hPa: 750 | ** |
| Supply-pump ! | Zero delivery (stop): |
| pressure bar: 7,88,4 | A4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |
| KSB solenoid-operated ! | Mech. shutoff: |
| valve volt: 12,0 | Speed 1/min: - |
| | Del.quantity cm3/: - |
| Overflow quantity at overflow valve: | 1000H. |
| 4-4 | Flore should be |
| 1st speed 1/min: 600 | Electr. shutoff: |
| Charge press, hPa: - | Speed 1/min: 400 |
| KSB solenoid-operated | ELAB volt: - |
| valve volt: 12,0 | Del.quantity cm3/: - |
| Oveflow : 55138 | 1000H. |
| quantity cm3/10s: (40153) | Tille delinion. |
| 2nd speed 1/min: 2400 | Idle delivery: |
| Charge press. hPa: 750 | Anh anna 4 (4) 2 145 |
| KSB solenoid-operated | 1st speed 1/min: 415 |
| valve volt: 12,0 | KSB solenoid-operated |
| Overflow : 55138 | valve volt: 12,0 |
| quantity cm3/10s: (40153) | Del.quantity cm3/: - |
| Notice and beginning to the second | 1000H.: (4,012,0) |
| Delivery-quant. and breakaway char.: | 2nd speed 1/min: 750 |
| | |

```
KSB solenoid-operated
               volt: 12,0
valve
Del.quantity cm3/: - 1000H.: 0...3,0
Automatic starting fuel delivery:
1st speed
              1/min: 400
KSB solenoid-operated
               volt: 12,0
valve
Del.quantity cm3/: -
              1000H: 20,0
 ind.
2nd speed
              1/min: 500
KSB solenoid-operated
               volt: 12,0
 valve
Del.quantity cm3/: -
              1000H: 30,0
 ax.
Shutoff electromagnet:
Cut-in
                   : 10,0
 min. voltage
Rated voltage
                   : 12,0
Mounting and assembly dimensions:
Designation
                   : 3,2...3,4 : 6,3...6,6
               mm
KF
               mm
MS
                   2,7...1,9
               mm
SVS max.
                  : 6,0
               min
                  : 21,8...23,8
: 8,9...12,3
ΧK
               mm
XL
               mm
Remarks:
Correction at adjusting nut (46)
```

```
BOSCH-INJ.-PUMP TEST SPECIFICATIONS
                                                  Speed
                                                  Charge press. hPa: 750
                                                  Del.quantity cm3/
1000H.: 44,0...45,0
Note inst. in remarks column
                  : VWW 2,4 L1
Test sheet
Edition
                  : 19.12.86
                                                   valve
                  : 6.84
replaces
                  : ISO 4113
Calibrating oil
                  : VE 6/10F2400 L144-1
Injection pump
Type number
                  : 0 460 406 030
                                                  Speed
Customer-specific information
Customer
                  : VW
                  : 087T
Engine
                                                   valve
TEST BENCH REQUIREMENTS
Calibrating-oil C
                                                  Speed
 return temp.
with thermometer : 40...48
electronically
                  : 42...50
Inlet press., bar : 0.2
                                                   valve
Calibrating nozzle-holder
 assembly
                  : 1 688 901 000
Opening
 pressure
              bar: 147...150
Test inj. tubing : 1 680 750 017
                                                  valve
                  : 6
Outside diameter
x Wall thickness
                                                 Start:
               mm: 840
x Length
                                                 Speed
Injection-pump setting values
Test specifications in parentheses
Timing-device travel:
                                                  valve
             1/min: 1500
Speed
Charge press. hPa: 750
              mm: 0,8...1,2
Setting value
KSB solenoid-operated
valve
              volt: 12,0
Supply-pump pressure:
             1/min: 1500
Speed
Charge press. hPa: 750
Setting value bar: 5,7...6,3
KSB solenoid-operated
                                                  valve
valve
              volt: 12,0
Full-load del. with charge press.:
```

M14

```
KSB solenoid-operated
             volt: 12,0
cm3/: 2,5
1000H: (3,0)
Dispersion
Full-load of. w/out charge press.:
             1/min: 600
Del.quantity cm3/
             1000H.: 25,5...26,5
KSB solenoid-operated
               volt: 12.0
Low-idle speed regulation:
              1/min: 415
Charge press. hPa: -
Del.quantity cm3/
1000H.: 6,0...10,0
KSB solenoid-operated
             volt: 12,0
cm3/: 2,0
1000H.: (3,0)
Dispersion
Full-load speed regulation:
              1/min: 2675
Charge press. hPa: 750
Del.quantity
              cm3/
              1000H: 10,0...16,0
KSB solenoid-operated
               volt: 12,0
              1/min: 100
Del.quantity mind.
         cm3/1000H.: 40,0
KSB solenoid-operated
               volt: 12,0
Inspection-pump test specifications
Test specifications in parentheses
Timing-device characteristic:
1st speed 1/min: 1500
Charge press. hPa: 750
TD travel
                 mm:
                 mm: (0,3...1,7)
KSB solenoid-operated
               volt: 12.0
              1/min: 1500
2nd speed
Charge press. hPa: 750
```

1/min: 1500

| TD travel mm: 3,04,0 | 1st speed 1/min: 800 |
|--------------------------------------|---|
| mm: (2,84,2) | Charge-air pressure-setting |
| KSB solenoid-operated | point hPa: 300 |
| valve volt: 12,0 | LDA stroke mm: 5,3 |
| 3rd speed 1/min: 2000 | KSB solenoid-operated |
| Charge press. hPa: 750 | |
| The travel may 7 1 7 0 | |
| TD travel mm: 3,13,9 | Del.quantity_cm3/: 32,533,5 |
| mm: (2,84,2) | 1000H.: (30,036,0) |
| KSB solenoid-operated | 2nd speed 1/min: 2825 |
| valve volt: 12,0 | Charge press. hPa: 750 |
| 4th speed 1/min: 2000 | KSB solenoid-operated |
| Charge press. hPa: 750 | valve volt: 12,0 |
| TD travel mm: 5,87,0 | Del.quantity cm3/: - |
| mm: (5,77,1) | 1000H.: 06,0 |
| KSB solenoid-operated | 3rd speed 1/min: 2675 |
| valve volt: - | Charge press. hPa: 750 |
| 5th speed 1/min: 2400 | KSB solenoid-operated |
| Charge press. hPa: 750 | valve volt: 12,0 |
| TD travel mm: 5,05,8 | |
| 10 Clavet 11811. 3,00.0.3,00 | Del.quantity cm3/: - |
| mm: (4,76,1) | 1000H.: (9,017,0) |
| KSB solenoid-operated | 4th speed 1/min: 2400 |
| valve volt: 12,0 | Charge press. hPa: 750 |
| land, and the second second | KSB solenoid-operated |
| Supply-pump pressure characteristic: | valve volt: 12,0 |
| | Del.quantity cm3/: 35,03/,0_ |
| 1st speed 1/min: 600 | Del.quantity cm3/: 35.037.0 1000H.: (33.738.3) |
| Charge press. hPa: 750 | 5th speed 1/min: 1500 |
| Supply-pump | Charge press. hPa: 750 |
| pressure bar: 3,33,9 | KSB solenoid-operated |
| KSB solenoid-operated | valve volt: 12,0 |
| valve volt: 12,0 | Del.quantity cm3/: - |
| 2nd speed 1/min: 1500 | 1000H.: (42,246,8) |
| Charge press. hPa: 750 | 6th speed 1/min: 600 |
| Supp Ty-pump | Charge press. hPa: - |
| pressure bar: 6,87,4 | KSB solenoid-operated |
| KSB solenoid-operated | valve volt: 12,0 |
| valve volt: - | Del.quantity cm3/: - |
| 3rd speed 1/min: 2400 | 1000H.: (23,029,0) |
| Charge press. hPa: 750 | (000 (20)01.12.70. |
| Supply-pump | Zero delivery (stop): |
| pressure bar: 7,88,4 | zero detrivery totopi. |
| KSB solenoid-operated | Mech. shutoff: |
| valve volt: 12,0 | |
| valve voit. 12,0 | |
| | |
| Overflow quantity at overflow valve: | 1000H. |
| 1st speed 1/min: 600 | Floats shutoff: |
| 1st speed 1/min: 600 | Electr. shutoff: |
| Charge press. hPa: - | Speed 1/min: 400 |
| KSB solenoid-operated | ELAB yolt: - |
| valve volt: 12,0 | Del.quantity_cm3/: - |
| Oveflow : 55138 | 1000Н. |
| quantity cm3/10s: (40153) | • |
| 2nd speed 1/min: 2400 | Idle delivery: |
| Charge press. hPa: 750 | |
| KSB solenoid-operated | 1st speed 1/min: 415 |
| valve volt: 12,0 | KSB solenoid-operated |
| Overflow : 55138 | valve volt: 12,0 |
| quantity cm3/10s: (40153) | Del.quantity cm3/: - |
| ' ' | 1000H.: (4,012,0) |
| Delivery-quant. and breakaway char.: | 2nd speed 1/min: 750 |
| | • |
| M15 | |
| | |

```
KSB solenoid-operated
               volt: 12,0
valve
Del.quantity cm3/: - 1000H.: 0...3,0
Automatic starting fuel delivery:
1st speed
              1/min: 400
KSB solenoid-operated
               volt: 12,0
 valve
Del.quantity cm3/: -
ind. 1000H: 20,0
             1/min: 500
2nd speed
KSB solenoid-operated
               volt: 12,0
 valve
Del.quantity cm3/: -
              1000H: 30,0
 ax.
Shutoff electromagnet:
Cut-in
min. voltage
                    : 10,0
Rated voltage
                   : 12,0
Mounting and assembly dimensions:
Designation
               mm: 3,2...3,4
mm: 6,3...6,6
mm: 1,7...1,9
mm: 6,0
KF
MS
SVS max.
               mm : 21,8...23,8
ΧK
               mm : 8,9...12,3
XL
```

3727 201

Remarks:

Del.quantity cm3/ 1000H.: 28,5...29,5 BOSCH-INJ.-PUMP TEST SPECIFICATIONS KSB solenoid-operated volt: 12,0 Note inst. in remarks column valve cm3/: 2.5 1000H.: (3.0) Dispersion : VWW 2,4 L3 Test sheet Edition : 19.12.86 replaces : 6.84 Low-idle speed regulation: : ISO 4113 Calibrating oil 1/min: 375 Speed Del.quantity cm3/ 1000H.: 6,0...10,0 Injection pump : VE 6/10F2400 L146 : 0 460 406 033 Type number KSB solenoid-operated Customer-specific information volt: 12.0 cm3/: 2.0 1000H.: (3,0) Customer : VW Dispersion : 087 Engine Full-load speed regulation: TEST BENCH REQUIREMENTS Speed 1/min: 2700 Del.quantity cm3/ Calibrating-oil 1000H: 6,0...12,0 return temp. KSB solenoid-operated with thermometer: 40...48 valve volt: 12.0 electronically : 42...50 Start: Inlet press., bar: 0.2 1/min: 100 Speed Del.quantity mind. cm3/1000H.: 35,0 Calibrating nozzle-holder : 1 688 901 000 assembly KSB solenoid-operated Opening valve volt: 12,0 bar: 147...150 pressure Inspection-pump test specifications Test specifications in parentheses Test inj. tubing : 1 680 750 017 Outside diameter : 6 Timing-device characteristic: x Wall thickness : 2 mm: 840 1/min: 1000 1st speed x Length TD travel mm: 0,6...1,4 mm: (0,3...,1,7)Injection-pump setting values KSB solenoid-operated Test specifications in parentheses volt: 12.0 1/min: 1000 mm: 1.8...3.0 mm: (1.7...3.1) valve 2nd speed Timing-device travel: TD travel 1/min: 1500 KSB solenoid-operated Setting value mm: 2,8...3,2 valve volt: -KSB solenoid-operated 1/min: 1500 3rd speed valve volt: 12.0 TD travel mm: mm: (2,3...3,7)Supply-pump pressure: KSB solenoid-operated volt: 12.0 1/min: 1500 Speed 1/min: 1500 valve Setting value bar: 5,5...6,1 4th speed mm: 4,1...5,1 mm: (3,9...5,3) TD travel KSB solenoid-operated valve volt: 12,0 KSB solenoid-operated valve volt: -Full-load del. w/out charge press.: 1/min: 2400 5th speed Speed 1/min : 1500

```
mm: (6,0...6,8
mm: (5,7...7,1)
TD travel
                                                     Del.quantity cm3/: 26,0...29,0
1000H.: (24,5...30,5)
KSB solenoid-operated
               volt: 12.0
 valve'
                                                      Zero delivery (stop):
Supply-pump pressure characteristic:
                                                      Mech. shutoff:
                                                      Speed
                                                                    1/min: -
                                                     Del.quantity cm3/: - 1000H.
              1/min: 600
1st speed
Supply-pump
 pressure
                bar: 3,0...3,6
KSB solenoid-operated
                                                     Electr. shutoff:
 valve
               volt: 12.0
                                                      Speed
                                                                    1/min: 400
              1/min: 1500
                                                     ELAB
2nd speed
                                                                     volt: -
                                                                    cm3/: -
                                                     Del.quantity
Supply-pump
                                                                   1000H.
                bar: 6,6...7,2
 pressure
KSB solenoid-operated
 valve
               volt: -
                                                      Idle delivery:
              1/min: 2400
3rd speed
Supply-pump
                                                     1st speed
                                                                   1/min: 375
                bar: 7,6...8,2
                                                     KSB solenoid-operated
 pressure
KSB solenoid-operated
                                                                     volt: 12,0
                                                      valve
                                                     Del.quantity
 valve
                                                                    cm3/: -
               volt: 12,0
                                                                  1000H.: (4,0...12,0)
Overflow quantity at overflow valve:
                                                                    1/min: 600
                                                     2nd speed
                                                     KSB solenoid-operated
1st speed
              1/min: 600
                                                      valve
                                                                     volt: 12,0
                                                     Del.quantity cm3/: -
1000H.: 0...4,0
KSB solenoid-operated
               volt: 12.0
: 55...138
 valve
Oveflow
 quantity cm3/10s: (40...153)
                                                     Automatic starting fuel delivery:
2nd speed
             1/min: 2400
KSB solenoid-operated
                                                     1st speed
                                                                    1/min: 400
               volt: 12,0
                                                     KSB solenoid-operated
 valve
                   : 55...138
                                                      valve
Overflow
                                                                     volt: 12,0
                                                     Del.quantity
 quantity cm3/10s: (40...153)
                                                                     cm3/:
                                                                    1000H: 20.0
                                                      ind.
Delivery-quant. and breakaway char.:
1st speed
             1/min: 2825
                                                                    1/min: 500
                                                     2nd speed
KSB solenoid-operated
                                                     KSB solenoid-operated
               volt: 12,0
                                                                     volt: 12,0
 valve
                                                      valve
Del.quantity cm3/: -
1000H.: 0...3,0
                                                     Del.quantity cm3/: -
                                                                   1000H: 25,0
              1/min: 2700
3rd speed
KSB solenoid-operated
                                                     Shutoff electromagnet:
 valve
               volt: 12,0
Del.quantity cm3/: -
1000H.: (5,0...13,0)
                                                     Cut-in
                                                                         : 10,0
                                                      min. voltage
              1/min: 2400
                                                                         : 12,0
                                                     Rated voltage
4th speed
KSB solenoid-operated
               volt: 12,0
                                                     Mounting and assembly dimensions:
 valve
Del.quantity cm3/: 22.0...24.0
1000H.: (20.7...25.3)
                                                     Designation
              1/min: 1500
                                                                         : 3,2...3,4
5th speed
                                                                     mm
                                                     KF
KSB solenoid-operated
                                                                     tom
                                                                           1,5...1,7
                                                     MS
               volt: 12,0
 valve
                                                                     mm
                                                                         : 3,6
: 21,8...23<sub>6</sub>8
Del.quantity cm3/: -
1000H.: (26,7...31,3)
                                                     SVS max.
                                                                     mm
                                                     XK
                                                                     mm
              1/min: 750
                                                     XL
                                                                         : 8,9...12,3
6th speed
                                                                     mm
KSB solenoid-operated
 valve
               volt: 12,0
                                                     Remarks:
```

BOSCH-INJ. - PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VWW 2,4 L2 : 19.12.86 Edition : 6.84 replaces Calibrating oil : ISO 4113

Injection pump : VE 6/10F2400 L146-1 Type number : 0 460 406 034

Customer-specific information

Customer

: 087 Engine

TEST BENCH REQUIREMENTS

Calibrating-oil return temp.

with thermometer : 40...48 electronically : 42...50

Inlet press., bar: 0.2

Calibrating nozzle-holder : 1 688 901 000 assembly

Opening bar : 147...150 pressure

Test inj. tubing : 1 680 750 017

Outside diameter : 6 x Wall thickness mm: 840 x Length

Injection-pump setting values Test specifications in parentheses

Timing-device travel:

1/min: 1500 Speed Setting value mm: 2.8...3,2 KSB solenoid-operated

valve volt: 12,0

Supply-pump pressure:

Speed 1/min: 1500 Setting value bar: 5,5...6,1 KSB solenoid-operated

valve volt: 12,0

Full-load del. w/out charge press.:

Speed 1/min : 1500

```
Del.quantity cm3/
1000H.: 28,5...29,5
                                                                       mm: 6,0...6,8
mm: (5,7...7,1)
                                                      TD travel
KSB solenoid-operated
                                                      KSB solenoid-operated
               volt: 12,0 cm3/: 2,5
 valve
                                                                     volt: 12.0
Dispersion
             1000H.: (3,0)
                                                      Supply-pump pressure characteristic:
Low-idle speed regulation:
                                                                    1/min: 600
                                                      1st speed
                                                      Supply-pump
                                                       pressure
                                                                      bar: 3,0...3,6
Speed
              1/min: 375
Del.quantity cm3/
1000H.: 6,0...10,0
                                                      KSB solenoid-operated
                                                       valve
                                                                     volt: 12,0
                                                                    1/min: 1500
KSB solenoid-operated
                                                      2nd speed
               volt: 12,0
                                                      Supply-pump
             cm3/: 2,0
1000H.: (3,0)
Dispersion
                                                       pressure
                                                                      bar: 6,6...7,2
                                                      KSB solenoid-operated
                                                                     volt: -
Full-load speed regulation:
                                                       valve
                                                                    1/min: 2400
                                                      3rd speed
                                                      Supply-pump
Speed
              1/min: 2700
Del.quantity
               cm3/
                                                       pressure
                                                                      bar: 7,6...8,2
              1000H: 6,0...12,0
                                                      KSB solenoid-operated
KSB solenoid-operated
                                                       valve
                                                                     volt: 12.0
 valve
               volt: 12,0
                                                      Overflow quantity at overflow valve:
Start:
                                                                    1/min: 600
                                                      1st speed
                                                      KSB solenoid-operated
Speed
              1/min: 100
Del.quantity mind.
cm3/1000H.: 35,0
                                                                     volt: 12.0
: 55...138
                                                       valve
                                                      Oveflow
KSB solenoid-operated
                                                       quantity cm3/10s: (40...153)
                                                                    1/min: 2400
 valve
               volt: 12,0
                                                      2nd speed
                                                      KSB solenoid-operated
                                                                     volt: 12,0
Inspection-pump test specifications
                                                       valve
                                                                         : 55...138
Test specifications in parentheses
                                                      Over flow
                                                       quantity cm3/10s: (40...153)
Timing-device characteristic:
                                                      Delivery-quant. and breakaway char.:
                                                                   1/min: 2825
                                                      1st speed
              1/min: 1000
                                                      KSB solenoid-operated
1st speed
                 mm: 0,6...1,4
TD travel
                                                       valve
                                                                     volt: 12,0
                                                      Del.quantity cm3/: -
1000H.: 0...3,0
                 mm: (0,3...1,7)
KSB solenoid-operated
              volt: 12.0
1/min: 1000
                                                                    1/min: 2700
 valve
                                                      3rd speed
2nd speed
                                                      KSB solenoid-operated
                 mm: 1.8...3.0
mm: (1.7...3.1)
                                                                     volt: 12,0
TD travel
                                                       valve
                                                      Del.quantity cm3/: -
1000H.: (5,0...13,0)
KSB solenoid-operated
valve
               volt: -
                                                      4th speed
                                                                    1/min: 2400
              1/min: 1500
3rd speed
                                                      KSB solenoid-operated
                                                                     volt: 12,0
TD travel
                                                       valve
                 mm:
                                                      Del.quantity cm3/: 22.0...24.0
1000H.: (20.7...25.3)
                 mm: (2,3...3,7)
KSB solenoid-operated
               volt: 12,0
                                                                    1/min: 1500
valve
                                                      5th speed
4th speed
              1/min: 1500
                                                      KSB solenoid-operated
                 mm: 4,1...5,1
mm: (3,9...5,3)
TD travel
                                                       valve
                                                                     volt: 12,0
                                                                     cm3/: -
                                                      Del.quantity
                                                                   1000H.: (26,7...31,3)
KSB solenoid-operated
                                                                    1/min: 750
valve
               volt: -
                                                      6th speed
5th speed
              1/min: 2400
                                                      KSB solenoid-operated
                                                       valve
                                                                     volt: 12,0
```

```
Del.quantity cm3/: 26,0...29,0
            1000H.: (24,5...30,5)
Zero delivery (stop):
Mech. shutoff:
Speed
             1/min: -
Deliquantity cm3/: - 1000H.
Electr. shutoff:
Speed
             1/min: 400
ELAB
              volt: -
Del.quantity cm3/: -
            1000H.
Idle delivery:
1st speed
             1/min: 375
KSB solenoid-operated
 valve
              volt: 12,0
Del.quantity
             cm3/: -
            1000H.: (4,0...12,0)
2nd speed
             1/min: 600
KSB solenoid-operated
              volt: 12.0
 valve
Del.quantity cm3/: -
            1000H.: 0...4,0
Automatic starting fuel delivery:
             1/min: 400
1st speed
KSB solenoid-operated
 valve
              volt: 12.0
Del.quantity cm3/:
             1000H: 20,0
 ind.
             1/min: 500
2nd speed
KSB solenoid-operated
              volt: 12,0
valve
Del.quantity cm3/: -
             1000H: 25,0
ax.
Shutoff electromagnet:
Cut-in
                  : 10,0
min. voltage
Rated voltage
                  : 12,0
Mounting and assembly dimensions:
Designation
                  : 3,2...3,4
              mm
KF
                  : 6,4...6,7
              mm
                  1,5...1,7
MS
              min
                  : 3,6
SVS max.
              mm
                 : 21,8...23,8
XK
              mm
                 : 8,9...12,3
XL
              mm
Remarks:
```

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VWW2,4 C2 Edition : 1.10.86

replaces

Calibrating oil : ISO-4113

Injection pump : VE 6/10F2400 L116-4 Type number : 0 460 406 035

Customer-specific information

Customer

: 087T -VOL LLK Engine

TEST BENCH REQUIREMENTS

Calibrating-oil return temp. °C

with thermometer : 40...48 electronically : 42...50

Inlet press., bar: 0.2

Calibrating nozzle-holder

assembly : 1 688 901 000

Opening -

pressure bar : 147...150

Test inj. tubing : 1 680 750 017

Outside diameter : 6 x Wall thickness : 2 mm : 840 x Length

Injection-pump setting values Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1500 Charge press. hPa: 750 Setting value mm: 1,4...1,8

Supply-pump pressure:

Speed 1/min: 1500 Charge press. hPa: 750

Setting value bar: 5,7...6,3

Full-load del. with charge press.:

Speed 1/min: 1500 Charge press. hPa: 750

```
Del.quantity cm3/
1000H.: 43.0...44.0
Dispersion cm3/: 2.5
1000H: (3.0)
                                                                Overflow quantity at overflow valve:
                                                                                 1/min: 600
                                                                1st speed
                                                                Charge press. hPa: -
                                                                                       : 55...138
Full-load del. w/out charge press.:
                                                                Oveflow
                                                                 quantity cm3/10s: (40...153)
                                                                                1/min: 2400
                                                                2nd speed
Speed
                1/min : 600
Del.quantity cm3/
                                                                Charge press. hPa: 750
                1000H.: 26,5...27,5
                                                                Over flow
                                                                                       : 55...138
                                                                 quantity cm3/10s: (40...153)
Low-idle speed regulation:
                                                                Delivery-quant. and breakaway char.:
Speed
                 1/min: 375
                                                                1st speed
                                                                                1/min: 2825
Deliquantity cm3/
                                                                Charge-air pressure-setting
                1000H.: 6,0...10,0
                                                                                   hPa: 750
                                                                LDA stroke mm: 4,2
Del.quantity cm3/: -
1000H.: 0...6,0
                cm3/: 2.0
1000H.: (3.0)
Dispersion
Full-load speed regulation:
                                                               2nd speed 1/min: 2675
Charge press. hPa: 750
Del.quantity cm3/: -
1000H.: (9,0...17,0)
3rd speed 1/min: 2400
Charge press. hPa: 750
Speed 1/min: 2675
Charge press. hPa: 750
Deliquentity cm3/
                 Charge press. hPa: 750
Del.quantity cm3/: 35,6...37,6
1000H.: (34,4...38,8)
4th speed 1/min: 1500
Start:
Speed
                 1/min: 100
                                                                4th speed
                                                                Charge press. hPa: 750
Del.quantity cm3/: -
1000H.: (41,3...45,7)
Sth speed 1/min: 800
Del.quantity mind.
          cm3/1000H.: 40.0
Inspection-pump test specifications
                                                                Charge press. hPa: 750
Del.quantity cm3/: 33,5...34,5
1000H.: (31,0...37,0)
Test specifications in parentheses
                                                                6th speed
Timing-device characteristic:
                                                                                1/min: 600
                                                                Charge press. hPa: 750
Del.quantity cm3/: -
1000H.: (24,0...30,0)
1st speed 1/min: 1200
Charge press. hPa: 750
                    mm: 0,2...1,0
mm: (0...1,3)
TD travel
                                                                Zero delivery (stop):
                 1/min: 1500
2nd speed
Charge press. hPa: 750
                                                                Mech. shutoff:
TD travel
                                                                Speed
                                                                                1/min: -
                     mm: -
                                                                Deliquantity cm3/: - 1000H.
                     mm: (0,9...2,3)
                 1/min: 2400
hPa: 750
3rd speed
Charge press.
                    mm: 4,1...4,9
mm: (3,8...5,2)
TD travel
                                                                Electr. shutoff:
                                                                                1/min: 400
                                                                Speed
                                                                ELAB
                                                                                  volt: -
                                                               Del.quantity cm3/: - 1000H.
Supply-pump pressure characteristic:
1st speed
                 1/min: 600
Charge press. hPa: 750
                                                                Idle delivery:
Supply-pump
                 bar: 3,3...3,9
1/min: 2400
                                                                                1/min: 415
                                                                1st speed
 pressure
                                                               Del.quantity cm3/: -
1000H.: (4,0...12,0)
2nd speed
Charge press. hPa: 750
                                                                                3/min: 750
Supply-pump
                                                                2nd speed
                   bar: 7,8...8,4
 pressure
```

```
Del.quantity cm3/: -
1000H.: 0...3,0
Automatic starting fuel delivery:
1st speed 1/min: 400
Del.quantity cm3/: -
ind. 1000H: 20,0
2nd speed
                  1/min: 500
Del.quantity cm3/: - ax. 1000H: 30,0
Shutoff electromagnet:
Cut-in
min. voltage : 10,0
Rated voltage : 12,0
Mounting and assembly dimensions:
Designation
                   mm : 3,2-3,4
mm : 6,3-6,6
mm : 1,7-1,9
K
KF
MS
                   mm : 2,4
mm : 21,8-23,8
mm : 9,6-12,7
SVS max.
ХK
XL
Remarks:
Correction at adjusting nut (46)
```

Del.quantity cm3/ 1000H.: 43,0..44,0 Dispersion cm3/: 2,5 BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column 1000H : -: VWW 2,4 C1 Full-load del. w/out charge press.: Test sheet Edition : 19.12.86 replaces 1/min : 600 Speed Calibrating oil : ISO-4113 Del.quantity cm3/ 1000H.: 26.5...27.5 Injection pump : VE 6/10F2400 L116-5 Type number : 0 460 406 036 Low-idle speed regulation: Customer-specific information Speed 1/min: 415 Del.quantity cm3/ 1000H.: 6,0..10,0 Customer : VW cm3/: 2,0 : 087T Engine Dispersion 1000H.: TEST BENCH REQUIREMENTS Full-load speed regulation: Calibrating-oil oc 1/min: 2675 Speed Charge press. hPa: 750 return temp. with thermometer : 40...48 Deliquantity cm3/ 1000H: 10,0...16,0 electronically : 42..50 Inlet press., bar : 0.2 Start: Calibrating nozzle-holder Speed 1/min: 100 : 1 688 901 000 assembly Del.quantity mind. cm3/1000H.: 40.0 Opening bar: 147...150 Inspection-pump test specifications pressure Test specifications in parentheses Test inj. tubing : 1 680 750 017 Timing-device characteristic: : 6 Outside diameter x Wall thickness 1/min: 1200 1st speed mm: 840 Charge press. hPa: 750 x Length mm: 0,2...1,0 mm: (0...1,3) TD travel Injection-pump setting values Test specifications in parentheses 2nd speed 1/min: 1500 Charge press. hPa: 750 TD travel Timing-device travel: mm: mm: (0,9...2,3) 1/min: 2400 Speed 1/min: 1500 3rd speed Charge press. hPa: 750 Charge press. hPa: 750 mm: 4,1...4,9 mm: (3,8...5,2) TD travel Setting value mm: 1,4..1,8 Supply-pump pressure: Supply-pump pressure characteristic: Speed 1/min: 1500 Charge press. hPa: 750 Setting value bar: 5,7..6,3 1/min: 600 1st speed Charge press. hPa: 750 Supply-pump bar: 3,3...3,9 1/min: 2400 Full-load del. with charge press.: pressure 2nd speed hPa: 750 1/min: 1500 Speed Charge press. Charge press. hPa: 750 Supply-pump pressure bar: 8,0...8,6

Overflow quantity at overflow valve: Idle delivery: 1st speed 1/min: 600 1st speed 1/min: 415 Charge press. hPa: -Del.quantity cm3/: -: 55..60,0 1000H.: (4,0-12,0) Oveflow quantity cm3/10s: (50..65,0) 2nd speed 1/min: 2400 Automatic starting fuel delivery: Charge press. hPa: 750 Overflow : 82. : 82..112 1st speed 1/min: 400 Del.quantity cm3/: 20,0...70,0 quantity cm3/10s: (77...117) 1000H: 20,0 ind. Delivery-quant. and breakaway char.: 1/min: 800 1/min: 500 1st speed 2nd speed Del.quantity cm3/: 10,0...30,0 Charge-air pressure-setting 1000H: 30.0 point hPa: 300 LDA stroke mm: 4,8
Del.quantity cm3/: 33,5...34,5
1000H.: (31,0...37,0)
2nd speed 1/min: 2825
Charge press has 750 Shutoff electromagnes: Cut-in : 10,0 min. voltage Charge press. hPa: 750 Del.quantity cm3/: -1000H.: 0...6,0 Rated voltage : 12,0 1/min: 2675 3rd speed Mounting and assembly dimensions: Charge press. hPa: 750 Del.quantity cm3/: 1000H.: (9,0...17,0)
4th speed 1/min: 2575
Charge press. hPa: 750
Del.quantity cm3/: 21,0...31,0
1000H.: (20,0...32,0)
5th speed 1/min: 2400
Charge press. hPa: 750 Designation : 3,2...3,4 K mm : 6,3...6,6 : 1,7..1,95 KF mm MS mm : 2,8 SVS max. mm Remarks: Charge press. hPa: 750
Del.quantity cm3/: 35,6...37,6
1000H.: (34,4...38,8) Correction at adjusting nut (46) 6th speed 1/min: 1500 Charge press. hPa: 750
Del.quantity cm3/: 1000H.: (41,3...45,7) 1/min: 600 8th speed Charge press. hPa: -Del.quantity cm3/: -1000H: (24,0...30,0) 9th speed 1/min: 600 Charge press. hPa: 750 Deliguantity cm3/: 35,5...38,5 1000H: (34,0...40,0) Zero delivery (stop): Mech. shutoff: Speed 1/min: -Del.quantity cm3/: - 1000H. Electr. shutoff: Speed 1/min: 415 ELAB volt: Del.quantity cm3/: 3 1000H.

11111

Del.quantity cm3/ 1000H.: 41,5...42,5 Dispersion cm3/: 2,5 BOSCH-INJ.-PUMP TEST SPECIFICATIONS 1000H : (3,0) Note inst. in remarks column : VWW 2,4 M Test sheet Full-load del. w/out charge press.: Edition : 19.12.86 replaces : 9.83 1/min: 600 Speed Del.quantity cm3/ 1000H.: 23,5...24,5 Calibrating oil : ISO 4113 :VE 6/10F2150 L152 Injection pump : 0 460 406 040 Low-idle speed regulation: Type number Customer-specific information Speed 1/min: 375 Customer Del.quantity cm3/ 1000H.: 6,0...10,0 cm3/: 2,0 1000H.: (3,0) Engine : 087T-LT Dispersion TEST BENCH REQUIREMENTS Full-load speed regulation: Calibrating-oil C Speed 1/min: 2400 Charge press. hPa: 750 return temp. with thermometer : 40...48 Del.quantity cm3/ : 42...50 1000H: 9,0...15,0 electronically Inlet press., bar : 0.2 Start: Calibrating nozzle-holder Speed 1/min: 100 Del.quantity mind. cm3/1000H.: 35,0 : 1 688 901 000 assembly Opening pressure bar : 147...150 Inspection-pump test specifications Test specifications in parentheses Test inj. tubing : 1 680 750 017 Timing-device characteristic: Outside diameter x Wall thickness : 2 1st speed 1/min: 1000 mm: 840 Charge press. hPa: 750 x Length TD travel mm: 0,5...1,3 mm: (0,2...1,6) Injection-pump setting values 1/min: 1500 Test specifications in parentheses 2nd speed Change press. hPa: 750 TD travel mm: Timing-device travel: mm: (1,8...3,2)
3rd speed 1/min: 2150
Charge press. hPa: 750 Speed 1/min: 1500 Charge press. hPa: 750 Setting value mm: 2,3...2,7 TD travel mm: 4,4...5,2 mm: (4,1...5,5) Supply-pump pressure: Supply-pump pressure characteristic: 1/min: 1500 Speed Charge press. hPa: 750 Setting value bar: 5,5...6,1 1st speed 1/min: 600 Charge press. hPa: 750 Supply-pump bar: 3,1...3,7 1/min: 2150 Full-load del. with charge press.: pressure 2nd speed hPa: 750 Speed 1/min: 1500 Charge press. Supp Ty-pump Charge press. hPa: 750 pressure bar: 7,2...7,8

```
Overflow quantity at overflow valve:
1st speed
                 1/min: 600
Charge press. hPa: -
                       : 55...138
Oveflow .
quantity cm3/10s: (40...153)
2nd speed 1/min: 2150
Charge press. hPa: 750
Overflow
                       : 55..138
 quantity cm3/10s: (40...153)
Delivery-quant. and breakaway char.:
1st speed
                1/min: 750
Charge-air pressure-setting
                   hPa: 300
 point
LDA stroke mm: 4.5
Del.quantity cm3/: 32.5...33.5
1000H.: (30.7...35.3)
2nd speed 1/min: 2600
Charge press. hPa: 750
Del.quantity cm3/: -
1000H.: 0...3,0
3rd speed
                 1/min: 2400
Charge press. hPa: 750
Del.quantity cm3/: -
1000H.: (8,0...16,0)
4th speed 1/min: 2150
Charge press. hPa: 750
Del.quantity cm3/: 35,0...37,0
1000H.: (33,7...38,3)
                 1/min: 1500
5th speed
Charge press. hPa: 750
Del.quantity cm3/: -
1000H.: (39,7...44,3)
6th speed
                 1/min: 600
Charge press. hPa: -
Del.quantity cm3/: -
1000H.: (21,7...26,3)
Zero delivery (stop):
Mech. shutoff:
                1/min: -
Speed
Del.quantity cm3/: - 1000H.
Electr. shutoff:
                1/min: 400
Speed
ELAB
                 volt: -
Del.quantity cms/
1000H.
                 cm3/: -
Idle delivery:
1st speed
                1/min: 375
Del.quantity cm3/: -
1000H.: (4,0...12,0)
```

1/min: 450

```
Del.quantity cm3/: -
            1000H.: 0...3,0
Automatic starting fuel delivery:
1st speed
             1/min: 400
Del.quantity cm3/: -
             1000H: 25,0
 ind.
             1/min: 500
2nd speed
Del.quantity cm3/: -
             1000H: 27,0
Shutoff electromagnet:
Cut-in
                  : 10,0
min. voltage
                  : 12,0
Rated voltage
Mounting and assembly dimensions:
Designation
              mm
                  : 3,2...3,4
KF
                  : 6,3...6,6
              mm
                  : 1,0...1,2
MS
              mm
                  : 3,8
SVS max.
              mm
                  : 1,8...2,4
FH
              mm
Remarks:
Correction at adjusting nut (46)
```

2nd speed

```
BOSCH-INJ.-PUMP TEST SPECIFICATIONS
                                                                1/min: 1250
                                                    Speed
                                                    Del.quantity cm3/
                                                                1000H.: 27,5...28,5
Note inst. in remarks column
                                                    KSB solenoid-operated
Test sheet
                   : BMW 2,4 E
                                                                  volt: -
                                                     valve
                                                                  cm3/: 3,5
Edition
                   : 19.12.86
                                                    Dispersion
replaces
                   : 10.85
                                                                1900H.:
                  : ISO 4113
Calibrating oil
                                                    Low-idle speed regulation:
                   : VE 6/10F2300 R206
Injection pump
                   : 0 460 406 047
Type number
                                                                 1/min: 400
                                                   Charge press. hPa: 500
                                                   Del.quantity cm3/
1000H.: 6,0...10,0
Customer-specific information
Customer
                   : BMW
                                                    KSB solenoid-operated
                   : M21D24W
Engine
                                                    valve
                                                                  volt: -
                                                                  cm3/: 3,5
                                                    Dispersion
TEST BENCH REQUIREMENTS
                                                                1000H .:
                                                    Full-load speed regulation:
Calibrating oil oc
                                                                 1/min: 2500
 return temp.
                                                    Speed
                                                   Charge press. hPa: 500
with thermometer : 40...48
electronically
                  : 42...50
                                                    Deliquantity cm3/
                                                                 1000H: 11,5...17,5
Inlet press., bar : 0.2
                                                    KSB solenoid-operated
                                                                  volt: -
                                                    valve
                                                                  cm3/: 5,0
Calibrating nozzle-holder
                                                    Dispersion
                  : 1 688 901 022
                                                                1000H.: -
 assembly
Opening
                                                    Stari:
             bar : 130...133
pressure
                                                                 1/min: 100
                                                    Speed
                                                    Charge press. hPa: -
                                                   Del.quantity mind.
cm3/1000H.: 45,0
Test inj. tubing : 1 680 750 073
Outside diameter : 6
                                                   KSB solenoid-operated
                                                                  volt: -
x Wall thickness : 2
                                                    valve
               mm: 450
                                                                1000H.: 12.0
x Length
Injection-pump setting values
                                                    Inspection-pump test specifications
Test specifications in parentheses
                                                    Test specifications in parentheses
Timing-device travel:
                                                    Timing-device characteristic:
             1/min: 1500
Speed
                                                                 1/min: 500
hPa: 500
Charge press. hPa: 500
                                                    1st speed
               mm: 4,1...4,5
Setting value
                                                    Charge press.
                                                                    mm: 3,0,..4,0
KSB solenoid-operated
                                                   TD travel
                                                                    mm: (2,8...4,2)
              volt: -
 valve
                               11111111111
                                                   KSB solenoid-operated
                                                                  volt: 12,0
                                                    valve
Supply-pump pressure:
                               2nd speed
                                                                 1/min: 1000
                                                   Charge press. hPa: 500 mm: 4,5...5,7)
Speed 1/min: 1500
Charge press. hPa: 500
Setting value bar: 5,9...6,5
                                                   KSB solenoid-operated
KSB solenoid-operated
                                                                 volt: 12.0
1/min: 750
 valve
              volt: -
                                                    valve
                                                    3rd speed
                                                   Charge press. hPa: 500
Full-load del. w/out charge press.:
```

NO1

| TD travel mm: 0,81,6 I | Del.quantity cm3/: - |
|---|-----------------------------|
| mm: $(0,5,9)$ | 1000H.: 06,0 |
| KSB solenoid-operated I | 3rd speed 1/min: 2500 |
| valve volt: - | Charge press. hPa: 500 |
| 4th speed 1/min: 1500 I | KSB solenoid-operated |
| Charge press. hPa: 500 | valve volt: - |
| TD travel mm: - | Del.quantity cm3/: - |
| mm: (3,65,0) | 1000H.: (10,518,5) |
| KSB solenoid-operated | 4th speed 1/min: 2300 |
| valve volt: - | Charge press. hPa: 500 |
| 5th speed 1/min: 2000 | KSB solenoid-operated |
| Charge press. hPa: 500 | valve volt: - |
| TD travel mm: 6,16,9 | Del.quantity cm3/: 26,229,2 |
| mm: (5,87,2) | 1000H.: (25,430,0 |
| KSB solenoid-operated | 5th speed 1/min: 1750 |
| valve volt: - | Charge oress hear 500 |
| valve voic. | Charge press. hPa: 500 |
| Cural value anagama abanastanistis: | KSB solenoid-operated |
| Supply-pump pressure characteristic: | valve volt: - |
| 1at area 1 1/2 in 200 | Del.quantity cm3/: 28,832,2 |
| 1st speed 1/min: 500 | 1000H.: (28,232,8) |
| Charge press. hfg: 500 | 6th speed 1/min: 1250 |
| Supply-pump ! | Charge press. hPa: -100 |
| pressure bar: 3,13,7 | KSB solenoid-operated |
| KSB solenoid-operated | valve volt: - |
| valve volt: - | Del.quantity cm3/: 22,024,0 |
| 2nd speed 1/min: 2000 | 1000H.: (20,725,3) |
| Charge press. hPa: 500 | 7th speed 1/min: 1250 |
| Supply-pump I | Charge press. hPa: 120 |
| pressure bar: 7,27,8 | KSB solenoid-operated |
| KSB solenoid-operated 1 | valve volt: - |
| valve volt: - | Del.quantity cm3/: 23,326,7 |
| | 1000H.: (22,727,3) |
| Overflow quantity at overflow valve: | 8th speed 1/min: 1250 |
| i i i i i i i i i i i i i i i i i i i | Charge press. hPa: 500 |
| 1st speed 1/min: 500 | KSB solenoid-operated |
| Charge press. hPa: 500 | valve volt: - |
| KSB solenoid-operated | Del.quantity cm3/: - |
| valve volt: - | 1000H: (25,730,3) |
| Oveflow : 4183 | 9th speed 1/min: 500 |
| quantity cm3/10s: (2698) | Charge press. hPa: 500 |
| | KSB solenoid-operated |
| | valve volt: - |
| Charge press. hPa: 500 | Del.quantity cm3/: 27,530,5 |
| KSB solenoid-operated I valve volt: - I | 10004 (26 0 32 0) |
| | 1000H: (26,032,0) |
| Overflow : 55138 | Zana daliwany (atan): |
| quantity cm3/10s: (40153) | Zero delivery (stop): |
| No. 1 Comment of the contract | Mark about &&. |
| Delivery-quant. and breakaway char.: | Mech. shutoff: |
| 1st speed 1/min: 1250 | Speed 1/min: - |
| Charge-air pressure-setting | Del.quantity cm3/: - |
| point hPa: 120 | 1000H. |
| LDA stroke mm: 5,0 | |
| KSB solenoid-operated | Electr. shutoff: |
| valve volt: - | Speed 1/min: 400 |
| Del.quantity cm3/: 23,226,7 | ELAB volt: - |
| 1000H.: (22,727,3) | Del.quantity cm3/: - |
| 2nd speed 1/min: 2650 | 1000H. |
| Charge press. hPa: 500 | |
| KSB solenoid-operated | Idle delivery: |
| valve volt: - | |
| , , , , , , , , , , , , , , , , , , , | |

```
1st speed
             1/min: 400
KSB solenoid-operated
 valve
               volt: -
Del.quantity cm3/: -
1000H.: (4,0...12,0)
             1/min: 450
2nd speed
KSB solenoid-operated
valve
              volt: -
Del.quantity cm3/: -
1000H.: 0...6,0
Automatic starting fuel delivery:
1st speed
              1/min: 200
KSB solenoid-operated
 valve
               volt:
Del.quantity cm3/: 42,0...52,0
             1000H: -
 ind.
2nd speed
             1/min: 400
KSB solenoid-operated
valve
              volt: -
Del.quantity cm3/: 25,0...35,0
             1000H: -
 ax.
3rd speed
             1/min: 480
KSB sole oid-operated
               volt: -
valve
Del.quantity
              cm3/: 21,7...26,3
              1000H: -
Shutoff electromagnet:
Cut-in
min. voltage
                   : 10,0
Rated voltage
                   : 12,0
Mounting and assembly dimensions:
Designation
K
              mm
                  : 3,2...3,4
KF
                  : 6,4...6,6
              mm
MS
                  : 1,4...1,6
              mm
SVS max.
                   : 3,9
              mm
Remarks:
```

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column : ONA Test sheet Edition : 16.12.86 replaces Calibrating oil : ISO 4113 : VE 6/10F1800 R209 Injection pump Type number : 0 460 406 048 Customer-specific information Customer : ONAN Engine : L634T TEST BENCH REQUIREMENTS Calibrating-oil oc return temp. with thermometer : 40...48 : 42...50 electronically Inlet press., bar : 0.2 Calibrating nozzle-holder assembly : 1 688 901 000 Opening pressure bar : 147...150 Test inj. tubing : 1 680 750 017 : 6 Outside diameter x Wall thickness : 2 mm: 840 x Length Start of delivery mm : 0,2 Prestroke (from BDC): +-0.02(0.04)Injection-pump setting values Test specifications in parentheses Timing-device travel: 1/min: 1400 Charge press. hPa: 800 Setting value mm: 4,3...4,7 Supply-pump pressure: 1/min: 1400 Speed Charge press. hPa: 800 Setting value bar: 4,8...5,4 Full-load del. with charge press.:

NO4

Del.quantity cm3/ 1000H.: 58.5...59.5 cm3/: 3.0 Dispersion 1000H : (4,0) Full-load del. w/out charge press.: 1/min : 700 Speed Del.quantity cm3/ 1000H.: 41,0...42,0 Low-idle speed regulation: Speed 1/min: 350 Charge press. hPa: -Deliquantity cm3/ 1000H.: 23.0...27.0 cm3/: 3.0 1000H.: (4.0) Dispersion Full-load speed regulation: Speed 1/min: 1900 Charge press. hPa: 800 Deliquantity cm3/ 1000H: 37,0..43,0 Start: Speed 1/min: 100 Deliquantity mind. cm3/1000H.: 55.0 Load-dependent start of delivery: 1/min: 1400 Speed Charge press. hPa: 800 Inspection-pump test specifications Test specifications in parentheses Timing-device characteristic: 1/min: 800 1st speed Charge press. hPa: 800 mm: 1,4...2,2 mm: (1,1...2,5) TD travel 1/min: 1400 2nd speed Charge press. hPa: 800 TD travel mm: mm: (3,8...5,2)1/min: 1800 3rd speed Charge press. hPa: 800 mm: 5,8...6,6 TD travel mm: (5,5...6,9) Supply-pump pressure characteristic:

1/min: 1400

Charge press. hPa: 800

Speed

Zero delivery (stop): 1st speed 1/min: 800 Charge press. hPa: 800 Mech. shutoff: Supply-pump bar: 2,7...3,3 1/min: 1800 1/min: 1800 pressure Speed 2nd speed Del.quantity cm3/: -1000H. Charge press. hPa: 800 Supply-pump pressure bar: 6,0...6,6 Idle delivery: Overflow quantity at overflow valve: 1st speed 1/min: 350 Del.quantity cm3/: -1000H.: (20,5..29,5) 1/min: 700 1st speed Charge press. hPa: 800 1/min: 400 2nd speed Del.quantity cm3/: 9,5...16,5 1000H.: (8,5...17,5) Oveflow' : 41...83 quantity cm3/10s: (26...98) 1/min: 450 2nd speed 1/min: 1800 3rd speed Charge press. hPa: 800 Overflow : 55. Del.quantity cm3/: -1000H.: 0...3,5 : 55...138 quantity cm3/10s: (40...153) Automatic starting fuel delivery: Delivery-quarit. and breakaway char.: 1st speed 1/min: 700 1st speed 1/min: 230 Charge-air pressure-setting Del.quantity cm3/: -1000H: 55,0 point hPa: 200 ind. LDA stroke mm: 6.5 Del.quantity cm3/: 47.0...48.0 1/min: 350 2nd speed 1000H.: (44,8...50,2) Del.quantity cm3/: -1/min: 2050 1000H: 42,0 2nd speed Charge press. hPa: 800 Del.quantity cm3/: -1000H.: 0...3,0 Shutoff electromagnet: 1/min: 2000 Cut-in 3rd speed Charge press. hPa: 800 : 10,0 min. voltage Del.quantity cm3/: 5.5...14.5 1000H.: (5.5...14.5) 4th speed 1/min: 1950 : 12,0 Rated voltage Mounting and assembly dimensions: Charge press. hPa: 800 Del.quantity cm3/: 23.0...31.0 1000H.: (22.5...31.5) 5th speed 1/min: 1900 Designation mm : 5,7...6,0 KF 5th speed mm : 1,3..1,55 Charge press. hPa: 800 MS mm Del.quantity cm3/: -1000H.: (35,5...44,5) SVS max. : 1.4 mm 1/min: 1800 6th speed Remarks: Charge press. hPa: 800 Del.quantity cm3/: 51.5...54.5 1000H.: (50.3...55.7) Correction at adjusting nut (46) 1/min: 1400 7th speed Charge press. hPa: 800 Del.quantity cm3/: -1000H.: (56,3...61,7) 1/min: 700 8th speed Charge press. hPa: 800 Del.quantity cm3/: 58,0...61,0 1000H: (56,1...62,9) 9th speed 1/min: 700 Charge press. hPa: -Deliquantity cm3/: -1000H: (38,8...44,2)

Del.quantity cm3/ 1000H.: 45,5...46,5 cm3/: 2,5 1000H: (3,0) BOSCH-INJ.-PUMP TEST SPECIFICATIONS Dispersion Note inst. in remarks column Test sheet : VWW 2,4 S1 Full-load del. w/out charge press.: : 19.12.86 Edition : 12.85 Speed 1/min : 600 replaces Del.quantity cm3/ Calibrating oil : ISO 4113 1000H.: 25,5...26,5 : VE 4/10F2400 L216 Injection pump : 0 460 406 049 Low-idle speed regulation: Type number Customer-specific information Speed 1/min: 415 Customer : VW Charge press. hPa: -Del.quantity cm3/ 1000H.: 6,0...10,0 : 0871 Engine cm3/: 2.0 1000H.: (3.0) Dispersion TEST BENCH REQUIREMENTS Full-load speed regulation: Calibrating-oil C return temp. 1/min: 2675 Speed Charge press. hPa: 800 With thermometer : 40...48 : 42...50 Deliquantity cm3/ electronically 1000H: 13,0...19,0 Inlet press., bar : 0.2 Start: Calibrating nozzle-holder : 1 688 901 000 Speed 1/min: 100 assembly Deliquantity mind. cm3/1000H.: 65.0 Opening pressure bar: 147...150 Inspection-pump test specifications Test specifications in parentheses Test inj. tubing : 1 680 750 017 Outside diameter : 6 Timing-device characteristic: x Wall thickness : 2 mm: 840 1/min: 1500 x Length 1st speed Charge press. hPa: 800 Injection-pump setting values TD travel mm: mm: (0,9...2,3) Test specifications in parentheses 1/min: 2000 2nd speed hPa: 800 Timing-device travel: Charge press. mm: 2,7...3,5 mm: (2,4...3,8) TD travel 1/min: 1500 Speed Charge press. hPa: 800 3rd speed 1/min: 2200 Setting value mm: 1,4...1,8 hPa: 800 Charge press. mm: 3,4...4,2 mm: (3,1...4,5) TD travel Supply-pump pressure: 1/min: 2400 4th speed Charge press. hPa: 800 Speed 1/min: 1500 mm: 4,1...4,9 mm: (3,8...5,2) TD travel Charge press. hPa: 800 Setting value bar: 5,7...6,3 Full-load del. with charge press.: Supply-pump pressure characteristic: 1/min: 1500 1st speed 1/min: 600 Speed Charge press. hPa: 800 Charge press. hPa: 800

```
Del.quantity cm3/: - 1000H.
Supply-pump
               bar: 3,3...3,9
1/min: 2400
 pressure
2nd speed
                 hPa: 800
                                                         Idle delivery:
Charge press.
Supply-pump
                 bar: 7,9...8,5
                                                                        1/min: 415
                                                         1st speed
 pressure
                                                         Del.quantity cm3/:
                                                                       1000H.: (4,0...12,0)
Overflow quantity at overflow valve:
                                                                        1/min: 750
                                                         2nd speed
                                                         Del.quantity cm3/: -
1000H.: 0...4,0
               1/min: 600
1st speed
Charge press. hPa: -
Oveflow
                     : 41...83
quantity cm3/10s: (26...98)
2nd speed 1/min: 2400
                                                         Automatic starting fuel delivery:
Charge press. hPa: 800
Overflow : 55...
                                                                        1/min: 230
                                                         1st speed
                                                         Del.quantity cm3/:
                     : 55...138
 quantity cm3/10s: (40...153)
                                                                        1000H: 40,0
                                                          ind.
                                                                        1/min: 380
Delivery-quant. and breakaway char.:
                                                         2nd speed
                                                         Del.quantity
1st speed
              1/min: 800
                                                                        cm3/:
Charge-air pressure-setting point hPa: 300
                                                                        1000H: 30,0
LDA stroke mm: 5,7
Del.quantity cm3/: 35,5...36,5
1000H.: (33,0...39,0)
                                                         Shutoff electromagnet:
                                                         Cut-in
                                                                              : 10,0
               1/min: 2850
                                                          min. voltage
2nd speed
Charge press. hPa: 800
                                                         Rated voltage
                                                                              : 12,0
Del.quantity cm3/: -
1000H.: 0...6,0
                                                         Mounting and assembly dimensions:
3rd speed
               1/min: 2675
Charge press. hPa: 800
                                                         Designation
Del.quantity cm3/: -
1000H.: (12,0...20,9)
                                                                              : 3,2...3,4
                                                         K
                                                                         mm
                                                         KF
                                                                         mm
                                                                              3-4...1,6
                                                         MS
4th speed
               1/min: 2575
                                                                         mm
Charge press. hPa: 800
                                                         SVS max.
                                                                         mm
Del.quantity cm3/: 25.0...35.0
1000H.: (24.0...36.0)
                                                         Remarks:
5th speed
               1/min: 2400
                                                         Correction at adjustment out (46)
Charge press. hPa: 800
Del.quantity cm3/: 37,5...39,5
1000H.: (36,3...40,7)
               1/min: 1500
6th speed
Charge press. hPa: 800
Del.quantity cm3/: -
1000H.: (43,8...48,2)
7th speed
               1/min: 600
Charge press. hPa: 800
Del.quantity cm3/: 37,5...40,5
              1000H.: (36,0...42,0)
               1/min: 600
8th speed
Charge press. hPa: -
Del.quantity cm3/: -
                                                         promin.
               1000H: (23,0...29,0)
Zero delivery (stop):
                                                          1000H.
Electr. shutoff:
              1/min: 415
Speed
ELAB
               volt: -
```

NO7

```
Speed 1/min....Charge press. hPa: 800
Del.quantity cm3/
1000H.: 63,5...64,5
BOSCH-INJ.-PUMP TEST SPECIFICATIONS
Note inst. in remarks column
Test sheet
                   : ONA
Edition
                   : 16.12.86
                                                                  1000H : (3,5)
replaces
Calibrating oil
                   : ISO 4113
                                                    Full-load del. W/out charge press.:
Injection pump
                   : VE 6/10F1400 R209-1
                                                    Speed
                                                                 1/min : 700
                                                    Del.quantity cm3/
1000H.: 43,5...44,5
Type number
                   : 0 460 406 052
Customer-specific information
                                                    Low-idle speed regulation:
Customer
                   : ONAN
                   : L634T
                                                                  1/min: 350
Engine
                                                    Speed
                                                    Charge press. hPa: -
                                                    Del.quantity cm3/
1000H.: 23,0...27,0
TEST BENCH REQUIREMENTS
Calibrating-oil
                                                                 cm3/: 3.0
1000H.: (3,5)
                                                    Dispersion
 return temp.
with thermometer : 40...48
                                                    Full-load speed regulation:
                  : 42...50
electronically
                                                    Speed
                                                                  1/min: 1480
                                                    Charge press. hPa: 800
Inlet press. bar : 0.2
                                                    Del.quantity cm3/
                                                                  1000H: 39,0...45,0
Calibrating nozzle-holder
                   : 1 688 901 000
 assembly
                                                    Start:
Opening
 pressure bar : 147...150
                                                    Speed
                                                                  1/min: 100
                                                    Del.quantity mind.
                                                             cm3/1000H.: 55.0
Test inj. tubing : 1 680 750 017
                                                    Load-dependent start of delivery:
Outside diameter
                   : 6
x Wall thickness
                                                                  1/min: 1100
                                                    Speed
                mm: 840
                                                    Charge press. hPa: 800
x Length
Start of delivery
                                                    Inspection-pump test specifications
                                                    Test specifications in parentheses
Prestroke
                mm: 0,2
         (from BDC): +-0,02(0,04)
Injection-pump setting values
Test specifications in parentheses
                                                    Timing-device characteristic:
                                                                  1/min: 800
                                                    1st speed
                                                    Charge press. hPa: 800
Timing-device travel:
                                                                     mm: 1,4...2,2
mm: (1,1...2,5)
                                                    TD travel
             1/min: 1100
Charge press. hPa: 800
                                                                  1/min: 1100
                                                    2nd speed
                                                    Charge press. hPa: 800
Setting value mm: 2,8...3,2
                                                    TD travel
                                                                     mm:
                                                                      mm: (2,3...3,7)
Supply-pump pressure:
                                                                  1/min: 1400
                                                    3rd speed
                                                    Charge press. hPa: 800
             1/min: 1100
Speed
                                                                     mm: 4,2...4,8
mm: (3,8...5,2)
Charge press. hPa: 800
                                                    TD travel
Setting value bar: 3,8...4,4
Full-load del. with charge press.:
                                                    Supply-pump pressure characteristic:
```

808

1/min: 1400 1/min: 400 Del.quantity cm3/: 1st speed 1000H. Charge press. hPa: 800 Supply-pump bar: 1,2...1,8 1/min: 1400 pressure Idle delivery: 2nd speed Charge press. hPa: 800 1st speed 1/min: 350 Supply-pump Deliquantity cm3/: -1000H.: (20,5..29,5) pressure bar: 4,8...5,4 2nd speed 1/min: 400 Del.quantity cm3/: 9.5...16.5 1000H.: (8.5...17.5) Overflow quantity at overflow valve: 1/min: 450 1/min: 700 3rd speed 1st speed Del.quantity cm3/: -1000H.: 0...3,5 Charge press. hPa: 800 Oveflow : 41...83 quantity cm3/10s: (26...98) 1/min: 1400 Automatic starting fuel delivery: 2nd speed Charge press. hPa: 800 Overflow : 55...138 1st speed 1/min: 230 quantity cm3/10s: (40...153) Del.quantity cm3/: 1000H: 55,0 ind. Delivery-quant. and breakaway char.: 1st speed 1/min: 350 1/min: 700 2nd speed Del.quantity cm3/: Charge-air pressure-setting hPa: 200 1000H: 42,0 point mm: 6,5 LDA stroke Del.quantity cm3/: 49.5...50.5 1000H.: (47.3...52.7) Shutoff electromagnet: 1/min: 1600 Cut-in 2nd speed Charge press. hPa: 800 : 10.0 min. voltage Del.quantity cm3/: -10004.: 0...3,5 : 12,0 Rated voltage 1/min: 1560 Mounting and assembly dimensions: 3rd speed Charge press. hPa: 800 Del.quantity cm3/: 6,0...14,0 1000H.: (5,5...14,5) Designation K mm 1/min: 1480 KF : 5,7...6,0 4th speed mm Charge press. hPa: 800 : 1,3..1,55 MS mm Del.quantity cm3/: -1000H.: (37,5...46,5) 5th speed 1/min: 1400 SVS max. mm : 1,6 Remarks: Charge press. hPa: 800 Del.quantity cm3/: 59,5...62,5 1000H.: (58,3...63,7) 1/min: 1100 6th speed Charge press. hPa: 800 Del.quantity cm3/: -1000H.: (61,3...66,7) 1/min: 700 7th speed Charge press. hPa: 800 Del.quantity cm3/: 59,5...62,5 1000H.: (57,6...64,4) 1/min: 700 8th speed Charge press. hPa: Del.quantity cm3/: 1000H: (41,3...46,7) Zero delivery (stop): Mech. shutoff:

Note inst. in remarks column

Test sheet : VWW 2,4 S Edition : 8.12.86 replaces : 12.85 Calibrating oil : ISO 4113

Injection pump Type number : VE 6/10F2400 L216-2

: 0 460 406 053

Customer-specific information

Customer

: 0871 Engine

TEST BENCH REQUIREMENTS

Calibrating-oil return temp. °C

with thermometer : 40...48 electronically : 42...50

Inlet press., bar: 0.2

Calibrating nozzle-holder

assembly : 1 688 901 000

Opening -

pressure bar : 147...150

Test inj. tubing : 1 680 750 017

Outside diameter : 6 x Wall thickness : 2 mm : 840 x Length

Injection-pump setting values Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1500 Charge press. hPa: 800

Setting value mm: 1,4...1,8

Supply-pump pressure:

1/min: 1500 Speed Charge press. hPa: 800 Setting value bar: 5,7...6,3

Full-load del. with charge press.:

1/min: 1500 Spé∉d Charge press. hPa: 800

Del.quantity cm3/ 1000H.: 45,5...46,5 Dispersion cm3/: 2,5 Supply-pump bar: 3,3...3,9 1/min: 2400 pressure 2nd speed hPa: 800 1000H : (3,0) Charge press. Supply-pump Full-load del. w/out charge press.: bar: 7,9...8,5 pressure Speed 1/min : 600 Overflow quantity at overflow valve: Deliquantity cm3/ 1000H.: 25,5...26,5 1st speed 1/min: 600 Charge press. hPa: -Low-idle speed regulation: Oveflow! 41...83 quantity cm3/10s: (26...98) nd speed 1/min: 2400 2nd speed Speed 1/min: 415 Charge press. hPa: -Charge press. hPa: 800 Del quantity cm3/Over flow : 55...138 quantity cm3/10s: (40...153) 1000H.: 6,0...10,0 cm3/: 2,0 1000H.: (3,0) Dispersion Delivery-quant. and breakaway char.: 1/min: 800 Full-load speed regulation: 1st speed Charge-air pressure-setting point hPa: 300 LDA stroke mm: 5,7 Del.quantity cm3/: 34,0...35,0 1000H.: (32,2...36,8) Speed 1/min: 2675 Charge press. hPa: 800 Del.quantity cm3/ 1000H: 13,0...19,0 1/min: 2850 2nd speed Charge press. hPa: 800 Start: Del.quantity cm3/: 1000H.: 0...6,0
3rd speed 1/min: 2675
Charge press. hPa: 800 Speed 1/min: 100 Del quantity mind. cm3/1000H.: 40,0 Inspection-pump test specifications Test specifications in parentheses 4th speed 1/min: 2575 Charge press. hPa: 800 Del.quantity cm3/: 25.0...35.0 1000H.: (26.0...34.0) Timing-device characteristic: 1/min: 2400 5th speed Charge press. hPa: 800 Del.quantity cm3/: 37,5...39,5 1000H.: (36,2...40,8) 1/min: 1500 1st speed Charge press. hPa: 800 TD travel mm: mm: (0,9...2,3) 1/min: 1500 6th speed Charge press. hPa: 800 2nd speed 1/min: 2000 Del.quantity cm3/(1000H.: (43,7...48,3) Charge press. hPa: 800 mm: 2,7...3,5 mm: (2,4...3,8) TD travel 1/min: 600 7th speed Charge press. hPa: 800
Del.quantity cm3/: 37.0...40.0
1000H.: (35.5...41.5) 2200 3rd speed 1/min: Charge press. hPa: 800 mm: 3,4...4,2 mm: (3,1...4,5) TD travel 1/min: 600 8th speed hPa: -4th speed 1/min: 2400 Charge press. Charge press. hPa: 800 Del.quantity cm3/: mm: 4,1...4,9 mm: (3,8...5,2) 1000H: (23,7...28,3) TD travel Zero delivery (stop): 1000H. Supply-pump pressure characteristic: Electr. shutoff: 1/min: 600 1st speed 1/min: 400 Charge press. hPa: 800 Speed ELAB volt: -

```
Del.quantity cm3/: - 1000H.
Idle delivery:
1st speed
               1/min: 415
Del.quantity cm3/: -
1000H.: (4,0...12,0)
2nd speed 1/min: 750
Del.quantity cm3/: -
1000H.: 0...4,0
Automatic starting fuel delivery:
1st speed
                1/min: 230
Del.quantity cm3/: -
ind. 1000H: 40,0
               1/min: 380
2nd speed
Del.quantity cm3/: -
ax. 1000H: 30,0
Shutoff electromagnet:
Cut-in
min. voltage : 10,0
Rated voltage : 12,0
Mounting and assembly dimensions:
Designation
                 mm : 3,2...3,4
mm : 6,3...6,6
KF
MS
                 mm : 1,4...1,6
mm : 2,9
SVS max.
Remarks:
Correction at adjusting nut (46)
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in the second

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column : VWW 2,4 C5 Test sheet Edition : 19.12.86 replaces Calibrating oil : ISO-4113 : VE 6/10F2400 L116-6 Injection pump : 0 460 406 054 Type number Customer-specific information Customer : VW : 087T Engine TEST BENCH REQUIREMENTS Calibrating-oil return temp. with thermometer : 40...48 : 42...50 electronically Inlet press., bar: 0.2 Calibrating nozzle-holder : 1 688 901 000 assembly Opening bar: 147...150 pressure Test inj. tubing : 1 680 750 017 : 6 Outside diameter x Wall thickness : 2 mm: 840 x Length Injection-pump setting values Test specifications in parentheses Timing-device travel: Speed 1/min: 1500 Charge press. hPa: 750 Setting value mm: 1,4...1,8 Supply-pump pressure: Speed 1/min: 1500 Charge press. hPa: 750

Setting value bar: 5,7...6,3 Full-load del. with charge press.: 1/min: 1500 Speed Charge press. hPa: 750

Del.quantity cm3/ 1000H.: 43,0...44,0 cm3/: 2,5 1000H:-Dispersion Full-load del. w/out charge press.: Speed 1/min: 600 Del.quantity cm3/ 1000H.: 26.5...27.5 Low-idle speed regulation: 1/min: 415 Speed Del.quantity cm3/ 1000H.: 6,0...10,0 cm3/: 2,0 Dispersion 1000H.: -Full-load speed regulation: 1/min: 2675 Speed Charge press. hPa: 750 Del.quantity cm3/ 1000H: 10_0...16_0 Start: 1/min: 100 Speed Del.quantity mind. cm3/1000H.: 40,0 Inspection-pump test specifications Test specifications in parentheses Timing-device characteristic: 1/min: 1200 1st speed Charge press. hPa: 750 TD travel mm: 0,2...1,0 mm: (0...1,3)1/min: 1500 2nd speed Charge press. hPa: 750 TD travel mm: mm: (0,9...2,3)1/min: 2400 3rd speed Charge press. hPa: 750 mm: 4,1...4,9 mm: (3,8...5,2) TD travel Supply-pump pressure characteristic: 1/min: 600 1st speed Charge press. hPa: 750 Supply-pump bar: 3,3...3,9 1/min: 2400 pressure 2nd speed Charge press. hPa: 750 Supply-pump pressure bar: 8,0...8,6

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Overflow quantity at overflow valve:
                 1/min: 600
1st speed
Charge press. hPa: -
                         : 55...70
Oveflow
 quantity cm3/10s: (50...75)
2nd speed 1/min: 2400
Charge press. hPa: 750
Over Flow
                        : 82...112
 quantity cm3/10s: (77...117)
Delivery-quant. and breakaway char.:
1st speed 1/min: 800
Charge-air pressure-setting
 point
                    hPa: 300
LDA stroke mm: 4,8
Del.quantity cm3/: 33,5...34,5
1000H.: (31,0...37,0)
2nd speed 1/min: 2825
Charge press. hPa: 750
Del.quantity cm3/:
Del.quantity cm3/: -
                1000H.: 0...6,0
                  1/min: 2675
3rd speed
Charge press. hPa: 750
Del.quantity cm3/: -
1000H.: (9,0...17,0)
4th speed 1/min: 2575
Charge press. hPa: 750
Del.quantity cm3/: 21,0...31,0
1000H.: (20,0...32,0)
                  1/min: 2400
5th speed
Charge press. hPa: 750
Del.quantity cm3/: 35,6...37,6
1000H.: (34,4...38,8)
6th speed 1/min: 1500
Charge press. hPa: 750
Del.quantity cm3/: -
1000H.: (41,3...45,7)
                  1/min: 800
7th speed
Charge press. hPa: 300
Del.quantity cm3/: 33,5...34,5
1000H.: (31,0...37,0)
                  1/min: 600
8th speed
Charge press. hpa:
                  cm3/: (200...30,0)
Del.quantity
                  17 7: 600%
9th speed
Charge press.
                      750 N
Del.quantity 355...38.5
Zero delivery (stop):
Electr. shutoff:
                  1/min: 415
Speed
ELAB
                   volt: -
Del.quantity cm3/; 3 1000H.
```

Idle delivery: 1/min: 415 1st speed Deliquantity cm3/: -1000H.: (4,0...12,0) Automatic starting fuel delivery: 1st speed 1/min: 400 Del.quantity cm3/: 20,0...70,0 1000H: 20,0 ind. 1/min: 500 2nd speed Del.quantity cm3/: 10.0...30.0 ax. 1000H: 30.0 Shutoff electromagnet: Cut-in : 10,0 min. voltage Rated voltage : 12.0 Mounting and assembly dimensions: Designation : 3,2...3,4 : 6,3...6,6 : 1,7..1,95 K mm KF mm MS mm : 2,4 SVS max. mm Remarks:

Correction at adjusting nut (46)

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Low-idle speed regulation: Note inst. in remarks column Speed 1/min: 300 Del.quantity cm3/ 1000H.: 13.0...17.0 cm3/: 3.5 1000H.: (4.0) Test sheet : STE 1.6 AA : 16.12.86 Edition Dispersion replaces Calibrating oil : ISO 4113 Full-load speed regulation: : VE 2/11F1200 R236 Injection pump 1/min: 1280 Speed : 0 460 412 001 Del.quantity cm3/ Type number 1000H: 33_0...39_0 Customer-specific information Customer : STEYR Start: : WD 209,41 Engine Speed 1/min: 100 Del.quantity mind. cm3/1000H.: 65,0 TEST BENCH REQUIREMENTS Calibrating-oil OC Inspection-pump test specifications return temp. Test specifications in parentheses with thermometer : 40...48 : 42...50 electronically Timing-device characteristic: Inlet press., bar: 0.2 1/min: 600 1st speed Calibrating nozzle-holder TD travel mm: 1,5...2,3 assembly : 1 688 901 000 fnm: (1,2...2,6)2nd speed 1/min: 1000 Opening TD travel mm: mm: (4,4...5,8) 1/min: 1200 pressure bar: 147...150 3rd speed mm: 6,6...7,4 mm: (6,3...7,7) TD travel Test inj. tubing : 1 680 750 017 Supply-pump pressure characteristic: Outside diameter : 6 x Wall thickness : 2 x Length mm: 840 1/min: 600 1st speed Supply-pump Injection-pump setting values Test specifications in parentheses pressure bar: 3,3...3,9 1/min: 1200 2nd speed Supply-pump Timing-device travel: bar: 6,4...7,0 pressure 1/min: 1000 Overflow quantity at overflow valve: Speed Setting value mm: 4,9...5,3 1st speed 1/min: 500 : 41...83 Supply-pump pressure: Oveflow cm3/10s: (26...98) 1/min: 1200 quantity 2nd speed 1/min: 1000 Over flow : 55...138 Setting value bar: 5,3...5,9 quantity cm3/10s: (40...153) Full-load del. w/out charge press.: Delivery-quant. and breakaway char.: 1/min: 1350 1/min : 1000 1st speed Speed Del.quantity cm3/: -1000H.: 0...2,5 Del.quantity cm3/ 1000H.: 68.5...69,5 cm3/: 3,5 Dispersion 1/min: 1320 2nd speed 1000H.: (4,0)

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Del.quantity cm3/: 3,5...11,5
1000H.: (3,0...12,0)
3rd speed
               1/min: 1280
Del.quantity cm3/: -
1000H.: (31,5...40,5)
4th speed
               1/min: 1200
Del.quantity cm3/: 67,5....71,7)
               1/min: 1000
5th speed
Del.quantity cm3/: -
1000H:: (66,3...71,7)
               1/min: 500
6th speed
Del.quantity cm3/: 63.5...66.5
1000H.: (61,6...68,4)
Zero delivery (stop):
Mech. shutoff:
               1/min: 1200
Speed
Del.quantity
               cm3/: -
             1000H.
Idle delivery:
1st speed
              1/min: 300
Del.quantity cm3/: -
             1000H.: (10,5..19,5)
2nd speed
               1/min: 350
Del.quantity cm3/: 0...7,0)
3rd speed
               1/min: 400
Del.quantity cm3/: -
1000H.: 0...2,5
Automatic starting fuel delivery:
1st speed
               1/min: 170
Del.quantity cm3/: -
               1000H: 75,0
 ind.
2nd speed
               1/min: 280
Del.quantity cm3/: -
               1000H: 65,0
 ax.
Shutoff electromagnet:
Cut-in
 min. voltage
Rated voltage
Mounting and assembly dimensions:
Designation
                   : 3,2...3,4
: 5,4...5,7
: 0,9..1,15
K
                mm
KF
                mm
MS
                mm
                   5.0
17.0...19.0
SVS max.
                mm
XK
                mm
XL
               mm
                    12,7...16,1
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Remarks:

Note inst. in remarks column

Test sheet : FIA 2,7 A Edition replaces : 16.10.86 : 1.85 Calibrating oil : ISO-4113

Injection pump : VE 3/11F1250 L163-1 Type number : 0 460 413 002

Customer-specific information Customer : FIAT-IVECO

: 8035.06.200 Engine

TEST BENCH REQUIREMENTS

Calibrating-oil return temp.

with thermometer : 40...48 electronically : 42...50

Inlet press., bar: 0.2

Calibrating nozzle-holder

: 1 688 901 020 assembly

Opening

pressure bar : 172...175

Perforated-plate

diameter mm: 0.6

Test inj. tubing : 1 680 750 017

Outside diameter : 6 x Wall thickness : 2 x Length mm: 840

Start of delivery

Prestroke mm: 0,2

(from BDC): +/-0,02(0,04)

Injection-pump setting values Test specifications in parentheses

Timing-device travel:

1/min: 1000 Speed Setting value mm: 2,8...3,2

Supply-pump pressure:

Speed 1/min: 1000 Setting value bar: 4,7...5,3

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Full-load del. W/out charge press.:
                                                         Delivery-quant. and breakaway char.:
              1/min : 800
                                                         1st speed
                                                                        1/min: 1450
                                                         Del.quantity cm3/: -
1000H.: 0...1,0
Del.quantity cm3/
              1000H.: 62,5...63,5
cm3/: 3,5
                                                         2nd speed 1/min: 1400
Del.quantity cm3/: 6.5...13.5
1000H.: (5.5...14.5)
3rd speed 1/min: 1350
Dispersion
              1000H.: -
Low-idle speed regulation:
                                                         Del.quantity cm3/: -
1000H.: (35,5...44,5)
               1/min: 400
Speed
                                                                        1/min: 1250
Del.quantity
               cm3/
                                                         4th speed
              10004.: 15,5...19,5
                                                         Del.quantity cm3/: 61,5...64,5
1000H.: (60,4...65,6)
                cm3/: 3,5
Dispersion
              1000H.: -
                                                                        1/min: 800
                                                         5th speed
                                                         Del.quantity cm3/: -
1000H.: (60,4...65,6)
6th speed 1/min: 500
Full-load speed regulation:
               1/min: 1350
                                                         Del.quantity cm3/: 53.5...56.5
1000H.: (51,6...58,4)
Del.quantity cm3/
               1000H: 37,0...43,0
Start:
                                                         Zero delivery (stop):
               1/min: 100
Speed
                                                         Mech. shutoff:
Del.quantity mind.
                                                         Speed
                                                                        1/min: 1250
                                                         Del.quantity cm3/: - 1000H.
         cm3/1000H.: 80.0
Inspection-pump test specifications
Test specifications in parentheses
                                                         Idle delivery:
                                                         1st speed
                                                                        1/min: 400
                                                         Del.quantity cm3/: -
1000H.: (13,0..22,0)
Timing-device characteristic:
               1/min: 800
                                                                        1/min: 425
1st speed
                                                         2nd speed
                                                         Del.quantity cm3/: -
1000H.: 0...5,0
TD travel
                  mm: 1,1...1,9
                  mm: (0,8,...2,2)
                                                                        1/min: 475
               1/min: 1000
                                                         3rd speed
2nd speed
                                                         Del.quantity cm3/: -
1000H.: 0...1,0
TD travel
                  min :
               mm: (2,3...3,7)
1/min: 1250
3rd speed
                  mm: 4,4...5,2
mm: (4,1...5,5)
TD travel
                                                         Automatic starting fuel delivery:
                                                                        1/min: 150
                                                         1st speed
Supply-pump pressure characteristic:
                                                                        cm3/: -
                                                         Del.quantity
                                                                        1000H: 90,0
                                                          ind.
               1/min: 400
1st speed
                                                                        1/min: 250
                                                         2nd speed
Supply-pump
               bar: 2,0...2,6
1/min: 1250
                                                         Del.quantity
                                                                        cm3/: -
pressure
2nd speed
                                                                        1000H: 50,0
Supply-pump
                 bar: 5,8...6,4
                                                         Shutoff electromagnet:
pressure
Overflow quantity at overflow valve:
                                                         Cut-in
                                                                              : 10,0
                                                          min. voltage
               1/min: 500
                                                         Rated voltage
                                                                              : 12,0
1st speed
                    : 55...138
Oveflow.
            cm3/10s: (40...153)
                                                         Mounting and assembly dimensions:
quantity
               1/min: 1250
2nd speed
                    : 55...138
Over flow
                                                         Designation
 quantity cm3/10s: (40...153)
                                                                         mm
                                                                             • -
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KF MS SVS max.

mm : 5,1...5,3 mm : 1,5...1,7 mm : 4,3

Remarks:

Note inst. in remarks column

Test sheet : STE 2,6K Edition : 15.12.86

replaces

Calibrating oil : ISO 4113

Injection pump : VE 3/11F1200 R263 Type number : 0 460 413 006

Customer-specific information Customer : STEYER

: WD 311.44 Engine

Power k: 35

TEST BENCH REQUIREMENTS

Calibrating-oil return temp. °C

with thermometer : 40...48 electronically : 42...50

Inlet press., bar: 0.2

Calibrating nozzle-holder

: 1 688 901 000 assembly

Opening |

pressure bar : 147...150

Test inj. tubing : 1 680 750 017

Outside diameter : 6 x Wall thickness : 2 mm: 840 x Length

Injection-pump setting values Test specifications in parentheses

Timing-device travel:

1/min: 1000 Setting value mm: 5,3...5,7

Supply-pump pressure:

1/min: 1000 Setting value bar: 6,2...6,8

Full-load del. W/out charge press.:

1/min: 1000 Speed

Del.quantity cm3/ 1000H.: 64,5...65,5

| Dispersion cm3/: 3,5 1000H.: (4,0) | 3rd speed 1/min: 1300 Del.quantity cm3/: 17.023.0 1000H.: (15,524,5) |
|--|--|
| Low-idle speed regulation: | 4th speed 1/min: 1250 |
| Speed 1/min: 300 Del.quantity cm3/ | Del.quantity cm3/: - 1000H.: (43,052,0) 5th speed 1/min: 1200 |
| 1000H.: 19.023.0 Dispersion cm3/: 3.5 I | Del.quantity cm3/: 60,063,0 1000H.: (58,864,2) |
| 1000H.: (4,0) Full-load speed regulation: | 6th speed 1/min: 1000 Del.quantity cm3/: - 1000H.: (62,367,7) |
| Speed 1/min: 1250 Del.quantity cm3/ 1000H: 43,551,5 | 7th speed 1/min: 500 Del.quantity cm3/: 55,558,5 1000H.: (53,660,4) |
| Start: | Zero delivery (stop): |
| Speed 1/min: 100 | Mech. shutoff: |
| Del.quantity mind. cm3/1000H.: 80,0 | Speed 1/min: 1200 Del.quantity cm3/: - 1000H. |
| Inspection-pump test specifications Test specifications in parentheses | Idle delivery: |
| Timing-device characteristic: | 1st speed |
| 1st speed 1/min: 500 TD travel mm: 0.71.5 mm: (0.41.8) | 2nd speed 1/min: 330 Del.quantity cm3/: 11.017.0 1000H.: (9.518.5) |
| 2nd speed 1/min: 1000 TD travel mm: - | 3rd speed 1/min: 400 Del.quantity cm3/: - 1000H.: 02,5 |
| 3rd speed 1/min: 1200 TD travel mm: 6,77,5 mm: (6,47,8) | Automatic starting fuel delivery: |
| Supply-pump pressure characteristic: | 1st speed 1/min: 170 Del.quantity cm3/: - ind. 1000H: 80,0 |
| 1st speed 1/min: 500 I Supply-pump I | 2nd speed 1/min: 250 |
| pressure bar: 4,34,9 | Del.quantity cm3/: - |
| 2nd speed 1/min: 1200 I Supply-pump I | ax. 1000H: 55,0 |
| pressure bar: 7,07,6 | Shutotf electromagnet: |
| Overflow quantity at overflow valve: | Cut-in min. voltage :- |
| 1st speed 1/min: 500 | Rated voltage : - |
| Oveflow : 4183 | |
| quantity cm3/10s: (2698) | Mounting and assembly dimensions: |
| Overflow : 55138 | Designation |
| quantity cm3/10s: (40153) | K mm : 3,23,4 KF mm : 5,76,0 |
| Delivery-quant. and breakaway char: | MS mm : 1,31,55 |
| 1st speed 1/min: 1350 | SVS max. mm : 4.0 |
| Del.quantity cm3/: - 1 1000H.: 02,5 | XK mm : 17,019,0 XL mm : 11,514,9 |
| | |

Remarks: N22

Note inst. in remarks column

Test sheet : STE 2,6K1 Edition : 16.12.86

replaces

Calibrating oil : ISO 4113

Injection pump Type number : VE 3/11F1200 R263-1

Type number : 0 460 413 007

Customer-specific information Customer : STEYR

: WD 311.85 Engine

Power k: 41

TEST BENCH REQUIREMENTS

Calibrating-oil return temp. C

with thermometer : 40...48 electronically : 42...50

Inlet press., bar: 0.2

Calibrating nozzle-holder

: 1 688 901 000 assembly

Opening

pressure bar : 147...150

Test inj. tubing : 1 680 750 017

Outside diameter : 6 x Wall thickness : 2 mm: 840 x Length

Injection-pump setting values Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1000 Setting value mm: 5,8...6,2

Supply-pump pressure:

1/min: 1000 Speed Setting value bar: 6,2...6,8

Full-load del. w/out charge press.:

Speed 1/min : 1000

Del.quantity cm3/

1000H.: 78,0...79,0

| Dispersion cm3/: 3,5 1000H.: (4,0) | 3rd speed 1/min: 1300 Del.quantity cm3/: 17.023.0 1000H.: (15,524,5) |
|---|--|
| Low-idle speed regulation: | 4th speed 1/min: 1250 Del.quantity cm3/: - |
| Speed 1/min: 300 Del.quantity cm3/ 1000H.: 11,015,0 | 1000H.: (44,553,5) Sth speed 1/min: 1200 Del.quantity cm3/: 74,577,5 |
| Dispersion cm3/: 3,5 | 1000H.: (73,378,7) |
| 1000H.: (4,0) Full-load speed regulation: | Oth speed 1/min: 1000 Del.quantity cm3/: - |
| Speed 1/min: 1250 i Del.quantity cm3/ | 7th speed 1/min: 500 Del.quantity cm3/: 72,575,5 |
| 1000H: 45,053,0 | 1000H.: (70,677,4) |
| Start: | Zero delivery (stop): |
| Speed 1/min: 100 | Mech. shutoff: |
| Del.quantity mind. I cm3/1000H.: 85,0 I | Speed 1/min: 1200 Del.quantity cm3/: - 1000#. |
| Inspection-pump test specifications | |
| Test specifications in parentheses | Idle delivery: |
| Timing-device characteristic: | 1st speed 1/min: 300 Del.quantity cm3/: - |
| | 1000H.: (8,517,5) |
| 1st speed | 2nd speed 1/min: 330 Del.quantity cm3/: 3,09,0 |
| mm: (1,32,7) | 1000H.: (1,510,5) |
| 2nd speed 1/min: 1000 | 3rd speed 1/min: 400 |
| TD travel mm: - | Del.quantity cm3/: - 1000H.: 02,5 |
| 3rd speed 1/min: 1200 | 10001111 01112,5 |
| TD travel mm: 6,97,7 mm: (6,68,0) | Automatic starting fuel delivery: |
| Supply-pump pressure characteristic: | 1st speed 1/min: 170 Del.quantity cm3/: - ind. 1000H: 85,0 |
| 1st speed 1/min: 500 | ind. 1000H: 85,0 |
| Supply-pump 1 | 2nd speed 1/min: 250 |
| pressure bar: 4,34,9 | Del.quantity cm3/: - |
| 2nd speed 1/min: 1200 ! Supply-pump ! | ax. 1000H: 65,0 |
| pressure bar: 7,07,6 | Shutoff electromagnet: |
| Overflow quantity at overflow valve: | Cut-in min. voltage : - |
| 1st speed 1/min: 500 | Rated voltage : - |
| Oveflow : 4183 | • |
| quantity cm3/10s: (2698) | Mounting and assembly dimensions: |
| Overflow : 55138 | Designation |
| quantity cm3/10s: (40153) | K mm: 3,23,4 |
| Delivery-quants and breakaway char:: | KF mm : 5,76,0 MS mm : 1,31,55 |
| 1st speed 1/min: 1350 | SVS max. mm : 4,4 |
| Del.quantity cm3/: - | XK mm : 17,019,0 |
| 1000H.: 02,5 | XL mm: 12,616,0 |

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Note inst. in remarks column

Test sheet : VOL 3.6 0
Edition : 27.10.86
replaces : 8.83
Calibrating oil : ISO-4113

Injection pump : VE 4/11F1900 L108 Type number : 0 460 414 004

. 5 455 414 55

Customer-specific information
Customer : VOLVO-PENTA

Engine : TMD 8199

Power k: 67

TEST BENCH REQUIREMENTS

Calibrating-oil return temp. °C

with thermometer : 40...48 electronically : 42...50

Inlet press., bar: 0.2

Calibrating nozzle-holder

assembly : 1 688 901 000

Opening

pressure bar : 147...150

Test inj. tubing : 1 680 750 017

Outside diameter : 6 x Wall thickness : 2 x Length mm : 840

Start of delivery

Prestroke mm: 0,2

(from BDC): +/-0.02/0.04

Injection-pump setting values Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1700 Setting value mm: 4,8...5,2

Supply-pump pressure:

Speed 1/min: 1700 Setting value bar: 6,4...7,0

Full-load del. w/out charge press.:

| Speed 1/min: 1500 Del.quantity cm3/ 1000H.: 59.060.0 Dispersion cm3/: 3.5 1000H.: - | Delivery-quant. and breakaway char.: 1st speed |
|---|--|
| Low-idle speed regulation: | 3rd speed 1/min: 2100 |
| Speed 1/min: 325 Del.quantity cm3/ 1000H.: 26,030,0 | Del quantity cm3/: - 1000H.: (34,042,0) 4th speed 1/min: 1870 Del quantity cm3/: 54,057,0 1000H.: (52,958,1) |
| Dispersion cm3/: 3,5 1000H.: - | 5th speed 1/min 1500 |
| Full-load speed regulation: | Del.quantity cm3/: - 1000H.: (56,962,1) 6th speed 1/min: 1000 |
| Del.quantity cm3/ 1000H: 35,541,5 | Del.quantity cm3/: 58,561,5 1000H.: (57,462,4) |
| Start: | 7th speed |
| Speed 1/min: 100 Del.quantity mind. cm3/1000H.: 60,0 | Zero delivery (stop): |
| Inspection-pump test specifications Test specifications in parentheses | Mech. shutoff: Speed 1/min: - Del.quantity cm3/: - 1000H. |
| Timing-device characteristic: | Electr. shutoff: Speed 1/min: 2260 |
| 1st speed 1/min: 1000 TD travel mm: 1,72,5 mm: (1,42,8) 2nd speed 1/min: 1700 | ELAB volt: - Del.quantity cm3/: - 1000H. |
| TD travel mm: - | Idle delivery: |
| 3rd speed 1/min: 1870 TD travel mm: 5,15,9 mm: (4,86,2) | 1st speed |
| Supply-pump pressure characteristic: | Del.quantity cm3/: - 1000H.: 04,0 |
| 1st speed 1/min: 600 Supply-pump pressure bar: 2,73,3 2nd speed 1/min: 1870 | 3rd speed 1/min: 500 Del.quantity cm3/: - 1000H.: 01,0 |
| Supply-pump pressure bar: 7,07,6 | Automatic starting fuel delivery: |
| Overflow quantity at overflow valve: | <pre>1st speed 1/min: 350 Del.quantity cm3/: - ind.</pre> |
| 1st speed 1/min: 600 1 Oveflow : 55138 1 quantity cm3/10s: (40153) 1 2nd speed 1/min: 1900 1 | 2nd speed 1/min: 500 Del.quantity cm3/: - ax. 1000H: 50,0 |
| Qverflow : 55138 quantity cm3/10s: (40153) | Shutoff electromagnet: |

Cut-in

min. voltage : 10.0 Rated voltage : 12.0

Mounting and assembly dimensions:

Designation K mm : -mm : 5,7...5,9 mm : 1,2...1,4 mm : 3,4 MS SVS max.

Remarks: